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THE MANAGEMENT OF PREGNANCY.

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The general practitioner, as a rule, has very little to do with the management of pregnancy. Not infrequently he does not see the pregnant patient until he is summoned to the labor, the husband taking it upon himself to engage the physician for the confinement. Again, the latter may see the patient but once during her pregnancy, when he estimates the probable date of confinement and makes arrangements for a suitable nurse. At times the patient is directed to send occasional samples of urine to the office, but if these directions are not followed their importance is seldom insisted upon. Only in the advent of some palpable pathologic condition does the physician arouse himself and take a seeming interest in the case. Of course there are notable exceptions, where the medical attendant performs his full duty, but his practice differs so markedly from that of his colleagues that he is actually placed on the defensive lest he be charged with being fussy, or still worse, with the desire to increase the size of the bill.

Now this neglect of the pregnant patient is not confined to certain localities or to certain types of practitioners. It is all too common in the cities, as well as in the country districts. And because of this wide distribution there must be an underlying cause or causes. Such neglect cannot be ascribed to ignorance, for the average physician knows full well what at times may happen to the pregnant patient. The obstetric art appeals to the American physician perhaps as does no other department of medicine. His practical mind delights in meeting and solving the problems presented by abnormal labors. Eagerly grasping anything of use to him in the practice of his art it would indeed be strange for him not to have a general knowledge of the various complications of pregnancy. Thus his inertness cannot be ascribed to a lack of knowledge. To what then is it due? To a number of things, I believe.

It is perfectly proper to consider pregnancy and labor as physiologic processes. Every good physician is more or less of an optimist, and is apt to look upon the habitual alarmist with some suspicion. He dislikes to be classed with those practitioners to whom every cold is a pneumonia and every fever, typhoid. Hence he tries to assuage the fears of the young wife about to become a mother with the statement that childbirth is a perfectly normal process, and that she must pay no attention to the scare stories of her officious friends and neighbors. So earnestly engaged has he been for many years in this calming campaign that it is no wonder that the people have taken him at his word. Labor, however, is associated with pain, and is dreaded to such an extent that the services of the physician are considered indispensable. But not so with pregnancy: the nine months

constitute a tedious period which must necessarily be gone through with, but that is all. It never occurs to the average pregnant patient that of the two periods, pregnancy and labor, the former is more likely to be fraught with danger.

The physician, then, is responsible for the present attitude of the laity regarding the pregnant state. It should be stated to the patient fairly, as I believe it is not, that while fortunately in the vast majority of cases the normal woman passes through her pregnancy in a perfectly normal manner, in a certain percentage of cases there are complications. It should be emphasized that the only way to avoid such complications is to be under the direct supervision of a trained medical attendant; for nowhere else is prophylaxis of more avail, and it is the physician's duty to continually preach its necessity. In fact, were it not for the small percentage of abnormalities during pregnancy, labor, and the puerperium, the physician's services could very well be dispensed with altogether. Where the doctor is called at the time of labor and departs immediately after the birth of the child, with no intention of seeing the patient again, the fee, no matter how small, has not been earned. Of what real service has the physician been? To be sure he may have been a most sympathetic and interested spectator of the parturient act, but in the normal case the woman would have got along just as well without him. Occasionally he steps in and does something, but usually he has no knowledge of what complication is liable to arise. What would we think of the captain of a passenger steamer who, with no knowledge of the condition or capacity of his vessel, calmly sees her entering a narrow and difficult passage without any particular guidance. Usually vessels get through all right, and he trusts to luck that his will. We may praise his courage and skill in doing what he can to save the passengers and vessel after she has struck the rocks, but the praise is faint at the best. It was his business to know how to keep off the rocks.

There is no question but what the public could be taught the importance of a careful supervision of pregnancy. If this statement be doubted, it is only necessary to review the history of appendicitis. Not so many years ago it was no easy task to persuade the patient with acute appendicitis to submit to immediate operation. Now, after a comparatively short campaign of education, it is difficult to prevent each and every patient with a pain in the right side from having the abdomen opened.

Then why does the practitioner, knowing what may happen to the exceptional pregnant patient, fail to take a hand in the management of pregnancy? Why does he trust to luck when he knows full well that luck will be against his patient in a certain percentage of cases? Humiliating as such a confession may be, I believe that financial considerations have much to do with the neglect of the pregnant patient. For the physician is undoubtedly miserably compensated for his obstetric work. The same man who cries out against the contract physician, declaring his conduct unethical, will contract to care for a woman during her confinement on terms so low that Chinese cheap labor would scorn to compete with them. The laborer is worthy of his hire—except the medical laborer. Obstetric fees were fixed long ago, when the cost of living was cheap as compared with what it is to-day. The compensation for all kinds of work has increased proportionately in all walks of life except that of medicine. Here the fees started low and have never advanced in any appreciable degree. As members of a noble profession, it may not be fitting to be always harping on the money side of our calling. Yet the discussion of this question is forced upon us if it be true that the real reason for the neglect of the pregnant patient is that the doctor feels that at the contract price he cannot afford to give up more than a minimum amount of time to his patient.

Even if he makes the necessary and careful examinations of the urine during pregnancy, the physician does not dare

charge for such work. In case he does have the courage of his convictions and makes a nominal charge, he is unfavorably compared with his competitors. Now the doctor could possibly stand the resulting loss of patronage if he felt that he was right and that he was fighting for a principle, but he cannot stand out long against the insinuation, which not infrequently accompanies such criticism, that an attempt is being made to increase the size of the bill. That last is the final straw, and he continues in the way of his predecessors and either neglects the pregnant patient entirely or looks after her interests in such a careless fashion as to make the result valueless. However, it must be said to the doctor's credit that if his patient becomes seriously ill or is in great danger she is not neglected, pay or no pay. But the mischief has often been done before the medical attendant has been aroused to action.

What then is the remedy for such a state of affairs? It would seem very simple. The situation demands concerted action on the part of the profession. Let it be thoroughly understood that the best interests of the patient demand that she receive more attention at the hands of the physician. Once let the public be thoroughly instructed in this matter and the rest is easy, for the average patient is no fool and does not care to take unnecessary risks. When all this is accomplished, the physician will receive the proper compensation for his work. The ridiculously low fee now charged for the average confinement will be raised to one commensurate with the responsibility of the accoucheur and the amount of time he must devote to his patient.

The patient should be taught the importance of consulting her physician as soon as she is reasonably certain she is pregnant. In a woman who has always been regular this will be soon after the non-appearance of the first menstrual period. A woman of less regular habits will not be sure she is pregnant until a longer period has elapsed.

History of the Case.—This should be carefully taken at the first interview, unless the physician be already conversant with the patient's medical history. Even a knowledge of the family history may not come amiss, and may put the practitioner on his guard for outbreaks of nervous and mental disorders.

The personal history is of even greater importance. Previous attacks of the infectious or contagious diseases may have seriously weakened important organs, as the heart or kidneys, which have to be watched and supported, when subjected to the additional strain of pregnancy. In the same way it is of the utmost importance that the physician should have a knowledge of such diseases as syphilis, rickets, and tuberculous joint affections, because of changes in the bony pelvis which may result from these diseases.

A history of previous attacks of pelvic inflammation would suggest the probability of damaged and adherent appendages. Previous gonorrheal inflammation may have resulted in a pelvic exudate, which holds the uterus firmly in abnormal positions. Upward movement of the enlarging, pregnant uterus thus becomes interfered with, and abortion or incarceration of the uterus is the result.

In the same careful manner an accurate history of previous pregnancies should be secured. The number, dates, and causes of the interrupted pregnancies should be ascertained, if such accidents are to be avoided in the future.

All facts relating to full-term pregnancies, labors, and the puerperia should be carefully recorded and studied. For example, a history of previous eclampsia, placenta previa, or insanity should put the obstetrician on his guard for repetitions in succeeding pregnancies.

All data relating to the child should be collected. Abnormal weight and size are apt to repeat themselves in subsequent children, and may even call for an early interruption of the pregnancy in the interests of both child and mother. The knowledge that a child of average size was born to a mother with a minimum amount of pain

and discomfort is of far more value than dozens of measurements of the pelvis with a pelvimeter.

With a little practice such a history as just outlined can be taken in a very short time. It can be filed away and will always be handy for future confinements. The busy practitioner is not expected to collect long-drawn-out statistics, but simply to collect data which may prove of value to him in the future management of the case.

Objective Examination.—For a number of reasons it is best that the patient be subjected to a thorough physical examination immediately after the taking of the history. In case the pregnant patient be the victim of pulmonary or other form of tuberculosis, it is highly essential for the physician to ascertain her exact condition early in pregnancy. The same may be said of cardiac, hepatic, and renal disorders. The physician needs to know of the existence of a retroverted, adherent, gravid uterus in the early stages of pregnancy, if his efforts to remedy the condition are to prove of any avail. Again, in primigravidæ it is important to recognize pelvic contraction early, in order that we may be prepared to institute appropriate treatment at the right time.

The obstetrician should neglect no general or special methods of examination which may be of service in forming an intelligent opinion of the patient's condition. Especially should the heart and lungs be carefully examined, unless such examinations have been made just prior to the pregnancy. Any variation from the normal in these organs may call for frequent and more extensive examination.

The breasts should now be examined. Size, shape, glandular tissue, and condition of the nipples are some of the things to be noted. The abdominal walls should next be inspected. Extreme pouching of the abdominal walls due to excessive stretching at previous pregnancies and separation of the recti muscles may call for a supportive abdominal bandage later in the pregnancy.

By external pelvimetry a general idea of the size of the pelvis can be obtained. Internal measurements will not be called for unless the external measurements are found to be markedly less than normal.

The external genitals should be inspected and abnormalities noted. A bimanual pelvic examination should be made in every pregnant patient as a routine procedure. Only exceptionally will it be objected to even by the most modest and sensitive patient, if its necessity be carefully explained.

Abnormalities of size, position, and density of the gravid uterus and appendages should be sought for and a general idea obtained of the capacity of the pelvic basin.

Next comes the examination of the urine, followed by general advice to the patient. Such advice should be given early in pregnancy, if the best results are to be accomplished. Then is the time to give directions regarding exercise, diet, dress, etc., all of which comprise the hygiene of pregnancy.

Selection of a Nurse.—It is surprising to see the indifference of the majority of physicians to the kind of a nurse engaged for the obstetric case. The selection is usually left to the patient, whose choice is guided by whim or advice of friends as ignorant as herself as to the essential qualifications of a good nurse. This indifference on the part of the profession is all the more astonishing when they must know that a patient is in constant danger from the administrations of a dirty and officious nurse. This custom of leaving the selection of the nurse to the patient and trusting to luck that nothing will happen belongs in the category of evils discussed above, and will disappear when the proper reforms are instituted.

It should be the practitioner's duty to keep upon his list a sufficient number of nurses, so that a proper selection can be made for his various patients. Whether these nurses be graduates of training schools will depend largely upon the community in which his practice lies. It is perfectly possible to train any intelligent

woman to be a competent and trustworthy nurse. Hence, neglect of the pregnant patient, so far as the selection of a proper nurse is concerned, is inexcusable.

The patient will gladly leave the selection of the nurse to a physician she has confidence in. In case there are objections and an incompetent nurse of the family's own selection is insisted upon, it is far better for the physician to withdraw from the case than to sanction what he knows to be dangerous to the patient.

The patient should be informed at the first interview that a suitable nurse will be sent to her for approval, and that the physician will give full instructions to the nurse regarding the preparations for the confinement.

Diet.—As a rule the average, normal pregnant patient can be allowed the various kinds of food and drink she has been accustomed to. This holds true provided such patients have not been excessive in their eating and drinking. A hearty, robust, non-pregnant woman usually eats one-third more than is actually necessary to maintain her in perfect health. The excess is usually well taken care of, at least for a number of years, by perfectly normal organs of elimination. The conditions may be entirely changed, however, if she becomes pregnant. Elimination may not be as active, and the excess of food and drink is not taken care of, becomes locked up in the system, and is at once a menace and source of danger to the patient. Hence, where a woman is a hearty eater she should be advised to cut down her diet during pregnancy. On the other hand, the physician should point out to his patient the evils resulting from a too restricted diet. Not a few women have an idea that such a diet, by decreasing the size of the child, will lead to a short and easy labor. The patient should be told that such a proposition has not by any means been scientifically proved, while the evils resulting from a lack of proper nourishment are matters of common, every-day observation.

More specific directions in regard to the diet may be necessary to tide the patient over the first few months of pregnancy, when nausea and often vomiting are apt to be annoying symptoms. The patient should be urged to depend upon small amounts of food and drink taken at frequent intervals. This plan will be found much more efficacious than the eating of three hearty meals a day. Hot drinks, such as coffee or tea, before rising in the morning are often grateful to and well borne by the stomach. Finally, the patient should be advised to partake of food, no matter whether she desires it or not. So long as it is not rejected it is in most instances absorbed, and is useful in keeping up the strength of the patient. Such advice seems necessary in view of the fact that many patients, unused to nausea, become discouraged and do not try to eat. Loss of weight and strength and impoverished blood may be the result.

Clothing.—Here again the physician should avoid extremes in his advice. The woman should be sensibly dressed during pregnancy, if at no other time. On the other hand, advice in regard to the proper clothing must conform in a certain degree to the prevailing custom, or else such advice will be disregarded altogether. The evil effects of tight corsets upon both mother and child should be explained to the patient. She should be advised to discard the corset and substitute some form of loosely fitting waist from the fourth month on. Such a waist will give the necessary support to a back long accustomed to a corset, yet there will be no undesirable pressure upon the expanding uterus. The patient should be urged to adopt a style of dress suitable to her condition, so that proper exercise can be taken without causing her excessive embarrassment.

All clothing should be supported from the shoulders, thus doing away with constricting bands. Stocking supporters should be given preference over garters, as the latter increase the tendency to varicose veins, so common in the pregnant patient. The kind and amount of underclothing can safely be left to the good

judgment of the patient. Close drawers need not be insisted upon, as it has never been proved, nor does it seem reasonable, that the dust of the street can find its way into the vagina of the pregnant woman.

Exercise.—The pregnant, like the non-pregnant, patient should be encouraged to take a certain amount of the proper kind of exercise. Each case is more or less a law unto itself. The exercise which agrees with one woman and keeps her in the best condition will prove inadequate for another patient. A woman unaccustomed to exercise, the possessor of weak and flabby muscles, should be warned against a sudden change in her habits upon the advent of pregnancy. This is particularly applicable to a certain class of idealistic, expectant mothers, who, from a sense of duty, may take up certain positively harmful forms of exercise.

In a general way the patient should exercise according to her usual custom. If she has been in the habit of taking long walks, these will prove most beneficial to her while pregnant. On the other hand, the woman who rarely walks, but usually drives, will undoubtedly receive the most benefit from such exercise. Whether the pregnant patient in the early part of her gestation can continue to indulge in such sports as tennis, golf, bicycling, automobiling, etc., will depend again largely upon the patient and the kind of uterus she has. The most violent exercise will have no effect upon some women, while in other women apparently harmless forms of exercise will interrupt the pregnancy. Until he knows the type to which the particular uterus belongs, the physician should counsel his patient against all forms of violent exercise. In this way falls and external violence are best guarded against.

With women in normal health railroad journeys are not, as a rule, contraindicated. At least this is true in the earlier months of pregnancy. The same cannot be said of women whose uteri are in a state of unequal equilibrium and liable to cast off their contents at the least provocation. In the case of such patients any shaking or jarring must be carefully avoided.

When the woman is constitutionally weak, or when she is extremely prostrated by her pregnancy, massage or selected Swedish movements may prove of great value as a substitute for, or as an adjunct to, active exercise. For obvious reasons massage of the abdominal muscles is contraindicated.

Fresh Air and Sleep.—An abundance of fresh air is almost essential to the well-being of the pregnant patient. Impure air will not only have a tendency to augment any inactivity of the organs of elimination, but by depriving the maternal tissues of the requisite amount of oxygen will have a most deleterious effect upon the fetus. For these reasons alone the patient should be urged to spend as much time out-of-doors as she can. For the same reason the air of the sleeping apartment should be made as pure as circumstances will permit, although direct drafts should be avoided.

Whatever may have been the patient's custom prior to pregnancy, during this period an abundance of sleep is highly essential. Excitement or anything tending to interfere with sleep should be avoided. Whenever possible an afternoon nap should be taken, or when the patient is unable to sleep during the daytime an equal amount of time can very profitably be spent in resting in the reclining posture.

Care of the Skin.—The skin should receive particular care during pregnancy, for, as one of the principal eliminating organs, its services may be called upon at any time. Just how the skin should be kept active will depend largely upon the patient's habits and surroundings. For the physician to insist that every pregnant woman take a daily tub or sponge bath would only expose him to the ridicule of a certain class of patients, who look upon a bath every month as frequent enough. But at least the physician can explain that frequent bathing not only is not injurious to the pregnant woman, but on the other hand is to be recommended. The woman accustomed to her daily tub or sponge

need not discontinue it during pregnancy. She should, however, avoid extremes of temperature if such are productive of shock. The external genitals should receive especial care and be kept scrupulously clean. Directions are sometimes necessary in this regard, because of the opinion that the genitals of the menstruating or pregnant woman should not be bathed.

Care of the Teeth.—Whether it be due to the superabundance of certain acids during pregnancy or to some other cause, there seems to be evidence that women are more subject to dental caries during pregnancy than at other times. Hence especial care should be devoted to the teeth during this period. Frequent use of such alkalies as milk of magnesia or lime-water is indicated. The tooth-brush should be used conscientiously after each meal, and the toothpick and dental floss should not be neglected. Whether dental work should be allowed or advised must depend upon the patient. In the majority of instances even extensive work upon the teeth would probably not be particularly dangerous, as far as the interruption of pregnancy is concerned. But since one can hardly foretell what the outcome will be, whenever the teeth demand immediate attention temporary fillings would seem safer, because such work can be performed much more rapidly.

The same advice will apply to all operative procedures. Because of their possible effect upon pregnancy, since it is impossible to predict what will happen in a particular case, they should be avoided whenever possible. On the other hand necessary operations should not be deferred, since in only a small percentage of cases will there be any untoward accident, as far as the uterus is concerned.

Care of the Bowels.—Constipation is only too common in the pregnant patient, and unless remedied the results may be disastrous. It is more common during the latter part of pregnancy because of the encroachment of the growing uterine tumor upon the normal position of the intestines, with resulting diminished peristalsis. The large intestine from the rectum to the ileocecal valve may be blocked with large accumulations of fecal matter. Fever, palpitation, dyspnea, headache, are not infrequent, and, combined with the toxemia due to absorption of the retained masses, may prove not only annoying but actually dangerous to the pregnant patient. The cramping pains toward the latter part of pregnancy often are not false labor pains, but arise from the efforts of the loaded intestine to free itself.

The patient is usually unconscious of her true condition, and even may be taking home remedies to check the frequent liquid evacuations resulting from the irritation set up by the impacted material. Therefore from the onset of pregnancy the patient should be given both general and detailed directions as to the care of the bowels. With this end in view the diet should be carefully regulated. If well borne by the stomach, fruit, vegetables, and breads made of the coarse flours should be liberally partaken of. Water should be taken freely, and large quantities of tea avoided. The physician should avoid the use of drugs unless the above measures fail. If driven to prescribe, only the milder laxatives should be employed, as abortion not infrequently results from the use of the more active cathartics. Small doses three times a day will be found to act better than larger doses at bedtime. From time to time the lower bowel should be thoroughly emptied by a soap-suds enema. Where the lower bowel is filled with fecal matter high enemas of sweet oil, followed by copious suds enemas, together with the liberal use of castor oil by mouth, will usually prove effective.

Care of the Breasts.—If the corset be discarded early in pregnancy, the breasts and nipples will be relieved from injurious pressure. Too often, however, tight corsets have driven in and caused an atrophy of the nipples, the resulting condition interfering with subsequent nursing. Whether during pregnancy such retracted nipples should be stretched and pulled outward must depend upon the susceptibility

of the uterus to such manipulations. If there be the slightest indication that the latter are setting up uterine contractions, such treatment should cease at once and not be resumed. The breasts, and especially the nipples, should be kept scrupulously clean. No alcohol, solution of tannin, or any other supposed hardening drug should be applied to the sensitive nipples. Not only are they useless, but they may do positive harm. Finally the breasts, when unusually heavy, should be supported by an appropriate bandage.

Marital Relations.—It is useless for the physician to direct that coitus cease during the pregnant period. Besides the fact that such advice will not usually be followed, it is questionable if the advice itself be good. The physician is not always in a position to judge what might follow such advice, if carried out, for the pregnant patient is naturally reticent in regard to marital difficulties. The question would much better be left for settlement to each patient provided she be fully informed as to certain dangers which may arise in her present condition. She should be warned against too frequent or too violent intercourse. An irritable uterus, one liable to throw off its contents at the least provocation, is peculiarly liable to be excited to abnormal contractions by intercourse during those periods at which the menstruation should normally appear. Hence at these times there should be no intercourse. Again, in order to avoid infection, there should be no coitus during the two weeks prior to the expected date of confinement.

The Kidneys.—Undoubtedly under exceptional circumstances it is possible for eclampsia to occur without any changes in the urine appearing before the convulsive seizures. But the physician must not be deceived by such exceptional cases, and conclude that the urine furnishes no reliable index to the patient's condition as regards elimination. While eclampsia, hyperemesis gravidarum, and other serious obstetric complications probably are due to failure in the functions of a number of organs, it is also true that the tests necessary to estimate the amount and degree of such failure are complicated and impractical from the standpoint of the general practitioner. This holds good except for the urine, which is easily tested and furnishes the physician with fairly accurate information regarding the patient's condition. The trouble lies not in the inaccuracy of the urinary tests, but in the perfunctory and careless manner in which they are made. The patient should be carefully instructed when and how to save the twenty-four-hour amount of urine. Up to the sixth month an examination every two weeks will suffice, but from that time to full term a weekly examination will not be any too often. In case anything abnormal be discovered in the urine, indicative of non-elimination on the part of the patient, more frequent and careful urinary examinations will be necessary. The patient should be impressed with the great importance of not only carefully carrying out the physician's orders, but also certain important symptoms, like a recurrence of nausea and vomiting, headache, and edema, should be carefully explained to her. Many women have been needlessly sacrificed because they misinterpreted these symptoms and failed to consult their physicians in time.

In the same way the patient should be carefully instructed as to the proper diet when the urine shows anything abnormal. A partial or complete milk diet will be rebelled against unless the patient understand the dangers of a heavier but more appetizing diet. If in spite of the ingestion of large quantities of water, the use of cathartics, and the increased activity of the skin, the patient shows no signs of improvement, she should be put in bed and an absolute milk diet insisted upon. In case the albumin and casts increase instead of diminishing the advisability of emptying the uterus in the interest of both mother and child must be carefully considered.

LACERATIONS OF THE GENITAL TRACT AND THEIR REPAIR.[1]

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The passage of the fetus through the parturient canal may produce lacerations of the cervix, of the vault of the vagina, the anterior, lateral, or posterior walls of the vagina, the pelvic floor, and the labia. Lacerations of the pelvic floor may extend down to but not through the sphincter ani muscle, or not only through the sphincter muscle but for a variable distance up the anterior wall of the rectum. Therefore, upon the termination of labor the genital tract should be carefully inspected with a good light, exercising rigid antiseptic precautions. Inspection is imperative, as the true extent of the traumatisms cannot be appreciated by simple digital examination.

The diagnosis of injuries to the vulva and perineum is readily made by external inspection, but the recognition of injuries to the pelvic floor, cervix, and vault of the vagina requires especial care in exposing the deeper structures. To make a thorough examination the patient must be placed upon her back or side, at the edge of the bed or on a table, the labia separated, and the pelvic floor raised for inspection. Too frequently the labia are merely separated, and if there is no evidence of a laceration at the outlet, or an external tear, the examination ends. Too frequently also lacerations of the pelvic floor only are sought for. The anterior vaginal wall should be routinely examined as to depth and extent of lacerations; for if the lacerations extending through the fascia are permitted to go unrepaired, as so frequently occurs, there will be a resulting cystocele, which until recently has proved so rebellious to operative cure.

Slight lacerations of the cervix invariably occur in primiparas, and usually heal spontaneously. These slight tears are, of course, possible avenues of infection. Extensive tears may be due to sudden stretching of the cervix, unwarranted interference on the part of the obstetrician in an endeavor to hasten dilatation of the cervix, and to operative procedures. It must be remembered that malignant disease and cicatricial tissue is a predisposing factor.

Whenever bleeding from the vagina continues, and the uterus is empty and contracted and there are no lacerations of the anterior vaginal wall to account for it, the cervix should be pulled down to the vulva, under strict asepsis, and inspected.

The cervix should be effaced and the os dilated or easily dilatable before applying forceps, otherwise lacerations of a deep and dangerous character may occur, extending into the vaginal vault, or even into the peritoneal cavity, with serious hemorrhage at the time, or a subsequent infection, or both.

It is the exception if a laceration does not occur during labor, and while every tear is an open avenue of infection, all those injuries which involve the pelvic floor and weaken its supporting power are subsequently followed by bad results.

The vulva may be torn anteriorly or laterally; if the laceration is in the vicinity of the clitoris the accompanying hemorrhage may require suture for its control. The posterior commissure and fourchette are invariably torn at the first labor. All of the traumatisms just mentioned are frequently superficial, and require only an antiseptic dressing.

Lacerations may occur in the vagina without any involvement of the perineum. Extensive rupture, however, involves both the vagina and perineum. The laceration of the external perineal surface is usually in or near the median line, and when it extends into the vagina the line of extension

[1]Read before the Northwestern Medical Society, April 1, 1907. Part of a symposium.

is usually into one or both vaginal sulci, so that the raw surface forms a partial or complete Y. When the laceration extends into the vaginal sulci the fibers of the levator ani muscle are involved, thus lessening the supporting power of this muscle, subsequently resulting in a rectocele with its consequent train of symptoms. There is a rare form of lesion known as a "central tear," caused by the child's head ploughing through the posterior vaginal wall and emerging through the skin of the perineum, without causing the rent to extend either into the rectum or vulva. Finally, it must be borne in mind that there may be a submucous rupture of the fibers of the levator ani muscle, without any external laceration. This form of injury does not produce symptoms until the woman assumes the upright position. Do not hasten to condemn the accoucheur in such cases. The treatment of this latter form of laceration belongs to gynecology rather than to obstetrics.

The causes of lacerations at the outlet are numerous. These lacerations will occur in certain cases in spite of the greatest care, but if skill is exercised these tears very frequently will be reduced to a minimum size. The cause in general of these lacerations is the disproportion in size between the passenger and the passage; but this can be frequently overcome if sufficient time be allowed for the soft parts to become distensible. Of other causes may be mentioned precipitate labors, advanced age of the patient, edema, want of elasticity in the tissues, and abnormal size of the fetal head. In some deliveries the child is directed too far backward, thus causing the head to hug too closely the posterior vaginal wall, which unduly distends the perineum as descent takes place.

Forceps delivery increases the danger of laceration if the delivery be too rapid, but if the operator may take his time the head is under such perfect control that he may extract at his leisure, thus allowing sufficient time for the necessary stretching. If there is time for careful delivery the added bulk of the blades of the forceps may be eliminated as a causative factor in injuries of the genital tract. All operative procedures as a rule predispose to laceration, because the conditions demanding such are likely to entail a rapid extraction, invariably at the expense of the maternal tissues. In delivering the head subsequent to a version, the rapid extraction necessary to save the child's life always threatens the integrity of the maternal soft parts. Too frequently after normal delivery of the head in vertex labors the attending physician considers that all risk of laceration is over, but it must be borne in mind that the posterior shoulder may rotate in such a backward direction, especially when the bisacromial diameter is large, that an extensive tear results, or what very frequently happens, the posterior shoulder renders more extensive a small rupture already produced by the passage of the head.

After the head is delivered, guide and deliver the posterior shoulder. As soon as the child has been delivered and cared for the examination of the vaginal outlet should be made.

Having determined the position and degree of lacerations of the genital tract, the question naturally arises, when shall the injuries be repaired? The time for the repair of these injuries may be divided into three periods: (1) The immediate, as soon as labor is completed, or within twelve to twenty-four hours thereof. (2) The intermediate, five to ten days after confinement. (3) The secondary, which is at any time subsequent to the termination of the puerperium.

It must be apparent to every one that the ideal method of procedure is the one which will restore the organs and structures of the parturient woman to a condition similar to what they were prior to the occurrence of her labor. When one considers the various sequels that are likely to result from failure to unite, this is still more evident. Subinvolution of the uterus and genital tract, the increased danger of infection, and the long train of symptoms that arise as secondary results

of such conditions make it extremely desirable that repair should be done as early as expedient.

Some obstetricians are advocating the intermediate, or fifth to seventh day, repair as a routine procedure. The genital tract is kept clean, to avoid as much as possible infection through the open avenues afforded by the injuries, until the fifth to the seventh day, when all lacerations of the genital tract, including the cervix, are sutured. However, I am skeptical as to the ultimate value of this intermediate repair. If primary healing is not satisfactory, the results of secondary operation are so good that to break into a woman's early convalescence and upset the general household on the fifth to the seventh day of the puerperium, by giving her ether and subjecting her to an operation, at a time when the milk secretion is fairly established and the baby is nursing well, is not justified by the surgical exigencies of the case. The wealthy and well-to-do will remain in bed the extra length of time incident to the intermediate repair, and so will patients under hospital care. But as the vast number of labors in this and all countries occur in private houses, and as in many instances it is essential that the parturient should leave her bed as early as consistent, and as a large number of women are so situated that they cannot receive the services of skilled assistance, the surroundings of the patient, the ability to receive efficient nursing, etc., must all be borne in mind, and as a consequence we must consider these operations from the standpoint of the conditions under which they will usually be performed.

Personally I prefer immediate repair of the lacerations incident to labor irrespective of their degree or extent, unless the patient is too exhausted, the physician tired out by too long attendance on the case, there is poor light, insufficient help, or the necessary instruments or suture materials are not available. In such instances twelve to twenty-four hours may be allowed to elapse, when all repair can be efficiently accomplished.

If the physician in attendance is unable to execute this work properly, he should not hesitate to call in one who is capable of doing so.

My practice in cases of cervical lacerations is to ignore the cervix, except when there is profuse hemorrhage from the lacerations, or in those cases in which it was necessary to make multiple incisions in the cervix. I think, in so far as the cervix is concerned, if the lacerations do not unite spontaneously better results are obtained by the secondary operation.

If the lacerations of the anterior segment of the pelvic floor are slight do not interfere. If, however, they are of considerable extent, the important fascia of the pelvis will be torn, and prolapse and dislocation of the bladder, urethra, and anterior vaginal wall will occur. The primary closure of such injuries gives satisfactory results, precautions being exercised to approximate the torn edges of the fascia. When extensive lacerations high up occur, it is often impossible to close the entire laceration accurately and completely.

If the tear in the posterior segment of the pelvic floor be considerable and the condition of the patient bad, the operator may wisely delay repair for twelve to twenty-four hours. The most important suture in closing lacerations of the pelvic floor are those that coaptate the torn levator ani and transversus perinei muscles.

In the introduction of sutures in the pelvic floor, the so-called "inside" sutures begin above toward the cervix and work out toward the vaginal outlet; in repairing the perineum the so-called "outside" sutures begin nearest the anus and proceed up to the point where the posterior vaginal wall begins. These latter sutures should bring together the skin edges and underlying fascia, taking a good hold of tissue, but without tension. The results following these operations are usually very good. When the pelvic floor alone is lacerated, sutures may be introduced previous to the delivery of the placenta, but not tied until after the placenta is delivered. In this way a great deal of time is saved and the

temptation to hasty expression of the placenta is diminished. In complete tears the rectum should first be closed by a continuous suture, the stitches inserted into connective tissue, turning the rectal mucosa into the bowel. The fascia and sphincter ani muscle should then be accurately closed, and then the pelvic floor and perineum, as in an incomplete tear. Operations for complete tears in the hands of all operators are not so satisfactory as those for the incomplete variety, a large percentage failing to heal by first intention. In the case of a complete or partial failure, a secondary operation is indicated before the patient is discharged from treatment.

For suture material twenty-day chromicized catgut is used throughout. Size No. 1 is sufficiently strong. No. 0 is used for buried sutures. If in the opinion of the operator the tension on the perineal sutures is too great, this may be diminished by the introduction of one or two silkworm-gut sutures.

Mercuric chloride need not be stronger than 1:4000, and lysol one per cent. Salt solution acts very nicely upon mucous membranes.

Dusting powders are not necessary, and when used do no good.

The after-treatment of these patients consists in strict regard to surgical cleanliness so applied as to disturb least the tissues and parts which are healing. The use of the catheter should be limited to the second day, even in most extensive cases. Whether the tear is complete or incomplete, the bowels should be moved at the end of forty-eight hours.

It is an interesting observation, repeatedly made, that puerperal infection may develop while wounds in the perineum and pelvic floor heal by primary union.

THE DEVELOPMENT OF OCCULT FINGER-PRINTS.

BY ROBERT L. PITFIELD, M.D., PHILADELPHIA.

The study of finger-prints made by bloody, dirty, or paint-smeared fingers on paper or glass is of great interest and value in medicolegal matters. But criminal fingers are not always conveniently inked with blood or paint. It occurred to me that perchance there was enough fat in the finger-prints of normal hands on glass, paper, etc., which, on development like a photograph, would reveal the impression of the finger. Accordingly I first rubbed my thumb with a little butter, making it slightly greasy; then I printed my thumb on a piece of glass, leaying a scarcely visible, greasy smear, such as often befogs eyeglasses. After exposing this smear or print to the fumes of osmic acid, the fat became as black as printer's ink, and all of the concentric lines could be seen as easily as if ink had been used.

Next, the normal secretions of a clean thumb were tried: here the grease print was very faint and indistinct, but all grease had been washed away with soap. On rubbing my thumb on my nose it became sufficiently greasy to print a very distinct mark, which became very black and sharp, revealing the concentric lines perfectly.

By this means greasy finger-marks on glass, paint, or paper may be made to reveal their occult design. In grease prints on paper, the grease is apt to be absorbed by the paper and the print become a mere grease spot; to obviate this freshly fingered paper should be kept on ice until exposed to osmic acid. Animal oils are more easily blackened than others. Mineral oils are but slightly susceptible to osmic acid.

If hands are not frequently washed there is enough sebaceous material on them to make faint prints after twelve hours' exposure of the prints to osmic acid.

It is possible to preserve prints by floating celloidin over them and hardening this with chloroform, then covering with varnish or with Canada balsam and coverglasses.

HOT AND COLD APPLICATIONS IN MEDICINE.

BY A. E. BLACKBURN, M.D.,

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Heat and cold are employed for such a number of conditions and in such a variety of ways that in this discussion it is not possible to do more than consider briefly their physiological action and the general principles of their application.

Heat and cold are not two distinct forces, but rather relative strengths of the same force, namely, caloric.

We use the term cold relatively, as it is the point at which there is no sensible heat, and this is estimated to be several hundred degrees below the zero point. By using the term cold we mean something that abstracts heat from the body; by the term heat we mean something that communicates heat to the body.

The lower animals are much less susceptible to this force than the human being. Their outside covering prevents the radiation of body heat, and also conducts heat and cold poorly. In the human being the subcutaneous tissue prevents the radiation of body heat, and we adjust our clothing in conformity to external influences.

PHYSIOLOGIC EFFECT OF HEAT.

Nervous System.—The effect of heat on the nervous system is first that of a transitory excitant followed by a sedative and depressing action, as is seen in relief of painful parts. Immersion of the whole body for a long period of time in warm water produces muscular weakness, languor, nervous depression, drowsiness, and finally convulsions and coma, the brain and nervous system becoming profoundly anemic.

Heart and Circulation.—The application of heat accelerates the heart action in direct proportion to the amount of dilatation of the superficial blood-vessels.

Respirations.—The respirations are at first increased, but later slowed.

Secretion and Excretion.—The secretions of the kidneys and salivary, sudorific, and intestinal glands are all increased. Heat lowers the muscular tone of the intestines and tends to constipation.

PHYSIOLOGIC ACTION OF COLD.

The first action of cold when applied either locally or generally to the surface is to cause a congestion of the superficial vessels, which is very soon followed by an extreme contraction of the parts, with a lowering of the surface temperature and hence the general temperature of the body. If the functions are good and the exposure has been moderate in amount, there is a reaction followed by a redilatation of the capillaries, increased circulation, and restored heat. In asthenic individuals the reaction is slow and sometimes does not follow. Prolonged exposure produces local and general syncope and devitalization. Beyond this point we have only the chemical action of the tissues.

Cold is used in medicine with two primary objects in view: First for its primary and secondary physiological effect on the nervous system, blood-vessels, and cells of the body; and secondly, for the absorption of heat. It is antispasmodic, anodyne, and anesthetic.

Schweinburg says: "The public to be sure believes the change from warm to cold treatment a basic difference, and yet this is only one of method and form." Braun (Balneotherapie, Berlin, 1868) says: "Cold refreshes by stimulating the functions, warmth by lessening their work physically; and in this sentence the most important practical difference is ex-

pressed." After reviewing further the action of hot and cold baths, he states: "The most general practical maxim is that the cold-water cure presupposes a certain integrity of the organic functions and a certain degree of productive ability, while the warm-water cure does not make so pronounced a demand on the inherent forced activity of the organism."

Some of the common conditions in which general hot baths are used are acute and chronic poisonings and intoxications, dyscrasias of various kinds, nephritis, gout, rheumatic and arthritic conditions, skin diseases, eruptive diseases, chorea, convulsions, insomnia, cardiac diseases, collapse, and acute colds. Some of the local conditions in which hot baths, either local or general, are used are myalgia, neuralgia, gall-stone colic, nephritic colic, meningitis, intestinal colic, pneumonia, pleurisy. Cold may be applied for many of the above states at the dictation of the physician; more especially is it employed for its antipyretic effect in the acute febrile conditions.

Hot baths may be Turkish, Russian, sponge, pack, hot dry air, hot moist air, as used in the different watering-places in this country and abroad. Locally we can use, in addition to the above, mud, sand, salt, fango, and electric baths.

Cold is usually applied as cold sponge or plunge baths, ice-pack, ice-cap, Leiter's coil, and by enema. There has been much discussion as to the benefits obtained from general and local baths. Hyde states that after twenty-five years' experience he is convinced that much harm is done by Turkish, Russian, and other hot baths, and warns especially against being deceived by a temporary improvement, which is followed by an aggravated state due to overstimulation. He advises strongly in favor of local treatment. Hauffe urges strongly in favor of local baths, claiming the general effects are as good as in the general bath. It is well established that local baths induce general perspiration, which effect is more pronounced if the unimmersed parts are lightly covered.

The Tallerman apparatus or some modification is the one mostly used in this country for local application of dry heat. It consists of a copper cylinder which is filled with dry air obtained from the burning of gas or oil, or heated by electricity. It may be made large enough to encompass practically the whole body. The temperature can be raised to two hundred and fifty to three hundred and fifty degrees. It is especially adapted to subacute or chronic conditions following disease or injury and in myalgias generally.

The very great benefit obtained by patients at various watering-places both at home and abroad depends upon several causes—hydrotherapy, diet, exercise, accessories.

Hydrotherapy.—The skin being the largest organ of the body excretes toxins the retention of which is harmful to the organism, and the effect of water affects the power that it possesses through its nerve endings to stimulate distant organs and tissues. The laity commonly believe and the profession do not sufficiently emphasize the fact that it is not the mineral constituents contained in the water that is drank and used in bathing that proves beneficial, but rather the excellent method by which it is applied by trained assistants. As a matter of fact, the less mineral matter contained in water, the better both for bathing and drinking.

Diet.—In this country especially there is great room for improvement. Luxurious hotels are present in which the gouty or rheumatic patient is confronted with a menu which is exceedingly tempting, but in which it is difficult for him to obtain what he most needs. It would certainly be a step in advance if some of these springs were so controlled that they would be available to the medium and poorer classes.

Exercise.—When under new surroundings patients are willing to undergo regular and systematic exercise, which they would not do at their homes.

Accessories.—Under these we have the

various forms of massage and electrical treatment, which add greatly to the benefit obtained in certain conditions.

Cold is used for the subsequent exhilarating effects, which may be increased by brisk rubbing. A cold plunge or shower on rising, for those who react promptly, is a good tonic and prevents catching cold. After exercise a cold shower followed by a brisk rub prevents muscle soreness. Cold sea bathing, if moderate in length, is stimulating, but is very apt to be prolonged to the point of depression.

Cold baths, either plunges or sponges, or pack, are employed in acute febrile diseases and especially in typhoid. The following effects are noticed: reduction of temperature, improvement of the nervous symptoms, strengthening of the circulation and respiration, and increased kidney secretion. Vogel's statistics of typhoid fever in the military hospital of Munich covering a period of fifty years show a reduction of mortality to two and seven hundredths per cent by the cold-bath treatment as compared with twenty per cent by other methods. There are certain instances of high temperature, cold and cyanosed extremities, in which I have found a hot mustard foot-bath to equalize the circulation, accomplish the same results, and be especially grateful to the patient.

FORMIC ALDEHYDE DISINFECTION BY MEANS OF POTASSIUM PERMANGANATE.[1]

BY E. M. HOUGHTON, PH.C., M.D., AND L. T. CLARK, B.S.

Formic aldehyde has been recognized for several years as the most efficient germicide available for disinfecting closed rooms and apartments. Some difficulty has been encountered in devising a safe, economical, and equally effective method for liberating the gas from its liquid or solid state, that would do away with the necessity for expensive apparatus and an experienced operator.

Various means have been employed for liberating the gas from saturated aqueous solutions of formaldehyde and from its dry polymeric form, paraform. The following methods have been the most extensively used: Autoclave under pressure; retort without pressure; generator or lamp; formaldehyde and dry heat in partial vacuum; sheet spraying; and heating paraform. These several ways have their respective good qualities as well as their objectionable features. The autoclave under pressure and retort without pressure are perhaps the most commonly used and rank among the first in efficiency, but they also have serious deficiencies, requiring (1) an expensive apparatus, (2) outside heat, (3) an experienced operator.

In January, 1904, Dr. G. F. Johnson, of Sioux City, Iowa, read a paper at a meeting of the Sioux Valley Medical Association, in which he described a new means for liberating formic aldehyde from its solution for purposes of disinfection. This method, conveniently called "the formalin-permanganate method," differs from others quite materially, as no outside heat is required. It consists in adding potassium permanganate crystals to full-strength formaldehyde solution in a convenient receptacle placed in the center of the room to be disinfected. Various proportions of permanganate and formaldehyde have been employed, but McClintic, of the Department of Public Health and Marine Hospital Service, as the result of an elaborate series of experiments, has recently reported that the best results are obtained when fifty grammes of potassium permanganate are brought in contact with one hundred cubic centimeters of formaldehyde, or multiples

[1]Read before the Sanitary Science Section of the Michigan Academy of Science, at Ann Arbor, March 28, 1907.

of these quantities, depending upon the space to be disinfected. Within a few seconds to one minute, depending upon the size of crystals used and the temperature of the room, a vigorous reaction ensues, causing strong ebullition of the liquid and producing sufficient heat to liberate a large volume of formic aldehyde gas and water vapor. This boiling continues from four to six minutes, becomes less vigorous, and gradually recedes until nothing remains except the nearly dry residue. In many of our trials it became thoroughly dry. In the majority of cases, however, this residue consisted of a lower oxide of manganese, a very small amount of formaldehyde, carbon dioxide, potassium hydrate, and some moisture. According to McClintic, the liberation of the gas and water vapor is brought about according to the following reaction: $-4KMnO_4+3HCOH+H_2O=4MnO(OH)_2+2K_2CO_3+CO_2(CO_2)$, the heat produced causing the liberation of formic aldehyde and water vapor. Contrary to the general belief, the amount of formic aldehyde destroyed is very small, as McClintic showed that the amount of gas in his test rooms was substantially the same as where an equivalent amount of the disinfectant was liberated by the autoclave, etc.

The following figures obtained from some of our experiments and from Dr. McClintic's results will convey a good idea of the exact amount of formaldehyde absorbed in the reaction and that liberated as gas. Computing from Dr. McClintic's formula, we find the amount of formaldehyde necessary to cause a complete reaction in the permanganate taken, by using the following equation:

$4KMnO_4 : 3HCOH ::$ weight of permanganate used : X, or $628 : 90 :: 240 : X$.

X=34 grammes formaldehyde used—that is, 85 Cc. of the formaldehyde would be used in the reaction, and the remainder, 395 Cc., would be driven off into the room.

To verify these results we made trial experiments and weighed the material before and after the reaction.

Weight of formaldehyde	510	grammes.
Weight of pail	992	grammes.
Weight of briquettes	281	grammes.
Total	1783	grammes.
Weight of pail and residue after reaction	1432	grammes.
	351	grammes.
Weight of moisture in residue	43	grammes.
	394	grammes.

Thus accounting for all but one gramme of material that would be driven off, as shown by Dr. McClintic's formula.

Practically it is found that in the ordinary commercial 40-per-cent formic aldehyde solution 38 per cent is available by the autoclave method, while with this method we can expect 33⅓ per cent, which does not differ greatly from the other; and even this apparent advantage in the autoclave method is more than counterbalanced by the very rapid liberation of the gas, which makes for very thorough disinfection, the end sought by sanitarians.

The public is becoming more thoroughly enlightened as to the necessity of disinfection, and health boards are demanding that the most efficient sanitary precautions shall be taken to limit the spread of the infectious diseases. Nothing has been discovered that will satisfactorily take the place of formic aldehyde, hence there is a crying demand for a more simple, practical, and efficient means of rendering the disinfectant available, and the formalin-permanganate method should win a place for itself.

Some preliminary experiments, carried out to determine the merits or demerits of this new method as applied to disinfection in a practical way, verified the results obtained by the Department of Public Health and Marine Hospital Service in their experiments to determine the best means of disinfecting railroad coaches. During the progress of our experiments it was found that when potassium permanganate crystals were added to formaldehyde in the above named proportions, in quantities sufficient to disinfect the ordinary sized living room, very violent ebullition and foaming oc-

curred, causing the material to boil over the sides of the receptacle. In our trials 240 grammes of potassium permanganate crystals were placed in an ordinary three-gallon pail and 480 Cc., one pint, of 40-per-cent formaldehyde was poured upon them, these quantities being sufficient to disinfect 1600 cubic feet of space.

As the spattering and foaming over the rim of the pail caused by such violent ebullition were, to say the least, very objectionable, measures were adopted to retard the reaction sufficiently to avoid this difficulty. After trying several series of experiments the desired result was successfully accomplished by incorporating with the potassium permanganate crystals 15 per cent of Portland cement and enough water to give the mixture the proper consistency for forming into small briquettes. After making, these briquettes are left until dry, when they can be readily handled.

With the potassium permanganate crystals in this compact form, the method becomes very simple and easy of operation. The charge, 480 Cc. of formaldehyde, is poured into a three-gallon metal pail, and the three briquettes containing 240 grammes of potassium permanganate crystals are quickly dropped into the liquid. The reaction ensues more slowly and with less violence than when the crystals alone are used, and is not accompanied by any undesirable foaming or spattering.

In conclusion we believe the following summary may be made:

1. Formic-aldehyde disinfection is simply and quickly accomplished by means of the permanganate briquettes.

2. No expensive apparatus is necessary, and no outside heat is employed, thus lessening the danger of fire.

3. More thorough disinfection is accomplished, because the whole volume of gas and moisture is liberated during a very short time.

A FEW PRACTICAL POINTS ON INFANT FEEDING.[1]

BY SAMUEL A. VISANSKA, PH.G., M.D., ATLANTA, GA.,

Visiting Physician to Home for Incurables and Physician-in-charge of Children's Dispensary of the Woman's Board of City Missions.

Six years ago when this association met at Augusta I read my first paper before it on the subject of infant feeding. My object in continuing this subject now is to tell you whether the results of my experience have been satisfactory or not, in order that, in this way, we may come to some conclusion as to what method we shall adopt.

Sometimes some of us boil over with enthusiasm on a subject or method, read a paper regarding it, and the members of the association must ofttimes wonder if the doctor is carrying out his same ideas or if his practical application of them has caused him to make changes in his original theories.

With so important a subject as infant feeding—a subject which has always baffled our skill and which must always continue to do so—we cannot deal too often or discuss it too freely. Experience has taught us that there are but two ways of feeding an infant, namely, either on human milk at the breast of a mother or wet-nurse, or upon an artificially prepared milk diet; hence we have the two corresponding classes of the breast-fed and the bottle-fed baby. It goes without saying that the breast-fed are as a rule a happier, healthier, and larger lot than the bottle-fed, and that the mortality of the former is far less than that of the latter. The most careful preparation cannot possibly make the milk of another animal chemically identical with that of a woman, or similar in its effects on the

[1]Read before the Medical Association of Georgia, April 17, 1907.

child; therefore it is the solemn duty of every healthy mother to nurse her infant, and it is still further the duty of the attending physician to see that this method is carried out.

The question, then, might well be asked, Why are so many infants fed otherwise? I am inclined to believe that physicians as a rule (there are exceptions to all rules) do not give this most important part of their duty enough time, thought, or attention, especially in the case of the primipara.

How many of us think of preparing the breasts for our little visitor, rather trusting to nature to do that? But how often do we find nature requiring just a little assistance! It does not need much, and a little time spent here will lessen the death-rate and bring joy and happiness to many a parent. Physicians do, or should, examine the urine before labor; they sometimes determine the position of the child, but do they examine the breasts to see what the outlook for nourishment is? The most important point here is to prepare the nipples, and this should begin at least two months before the expected time. Teach the mother how to pull the nipples out and give some slightly astringent solution to toughen the nipples somewhat for the suction force to be made by the infant. I prefer a solution of alum and distilled extract of witch-hazel. Sometimes you will find that while the fingers will pull the nipples out into good shape, as soon as the breasts begin to enlarge and secrete milk the nipples seem to shrink or rather become inverted, and are not long enough for the baby to take hold. Then you are "up against it," and it will require a great amount of patience on the part of the mother, nurse, and doctor to overcome this. It is right here that a great number of infants get a bad start. The baby frets, and the first thing you know a nipple already "developed" is ordered from the drug store, and the little one is placed on one of the artificial foods. This trouble can be overcome in most cases by the use of a Yale breast pump. It not only stimulates the secretion of milk, but it draws the nipple out, and by placing the baby to the breast immediately it has little trouble in nursing. This process might be repeated each time for several days. You can vary the amount of suction force by moving the pump up and down. It works in the same way as a bicycle pump, and it does not get out of order nearly as quickly as does the old-style breast-pump.

Another important point is the diet of the mother just before and after labor. This should consist of easily digested food, chiefly liquid nourishment or semisolids; no heavy foods such as pork, cabbage, turnip greens, pastries, etc., should be given. Especially after labor it is safe to give only such foods as gruel, soup, soft eggs, toast, and tea drawn with milk instead of water, all of which will usually produce sufficient stimulation to the mammary glands. The malt preparations might be good in a few cases in which the milk is scanty, but I am inclined to believe that their use has been overestimated.

Sometimes we find that infants do not thrive even on breast milk, and we should be able to tell whether the fault lies with the fats or proteids. This can easily be determined by the use of Holt's lactometer and cream gauge.

In regard to wet-nursing, it is only in the extreme cases that I suggest this course of feeding, as experience has taught me that there are many objections to a wet-nurse, and, indeed, in this part of the country it is often impossible to find a suitable one.

Artificial Feeding.—By conscientious work on the part of the chemist and physician the artificial feeding of infants has become almost a science. By chemical analysis we know the composition of mother's milk and of cow's milk, while by actual experience we have found that it is the casein in cow's milk which is difficult to digest, and now by the "percentage feeding," known also as the "American method," the difficulty formerly experienced has been made easy.

As I stated in my former article, we must

have a sort of starting-point and then modify to suit each individual case, as you will find every infant a law unto itself.

The infant's stomach has certainly been a great experiment station, but even this is no longer necessary.

The method of Professor Seibert, that of feeding by weight and not by the age of the child, has been carried out by me for years, with most excellent results, and I "stand pat" on this method.

There is good reason for this: a large child requires more food than a small one, just as a large horse requires more food than a small horse, and it is on this principle that we should feed infants. To illustrate: A baby at the age of three months might weigh eighteen pounds, while the average weight is only twelve and three-quarter pounds. If you were to direct the preparation for the three-months-old baby according to its age, the formula would be for a baby weighing 12¼ pounds, and therefore 5¾ pounds of the baby would be insufficiently nourished. On the other hand, a child at the age of three months weighing eighteen pounds can be placed on the same formula as the average baby of eight months weighing eighteen pounds.

It is during the summer months, when the difficult cases come in, that this method of weight will serve you. For example, a case of marasmus is brought in, and upon inquiry you learn that for the past month or so the different foods were given, but in some way the baby lost weight, and it is now almost a skeleton, with wrinkled face and almost a continuous whine, looking at least eighty years old. You ask the age: "Eleven months;" the weight, "Ten and a half pounds;" and, gentlemen, if you were to direct the food according to age it would never agree with it. Instead, what do we do? We give it not only the same percentage of fats and proteids and sugar as we would a normal baby at two months, but also the same quantity of milk.

Modified cow's milk is the ideal food for infants, but it requires some experience and judgment to know when to begin the milk after leaving it off. In "summer complaints," for instance, I never allow a drop of milk to pass the infant's lips, but am guided entirely by the condition of the infant's stomach and the character of the stools. The important point I wish to make here is this: An infant is brought to you with a gastroenteric trouble, a history of having tried first one food, then another, and the question is what to do. I begin by taking away all food except sterile or barley water, treat the disease, and then place the baby on modified milk according to its weight. As a rule this agrees with the little one, and all goes well for a week or two, when for some reason the stools change in character and frequency, and in cases not understood you might think it was the preparation that was at fault, but this is usually not the case. There might have been an infection from the milk supply or carelessness in cleaning the bottles and nipples. Then, again, infants are "all liver;" so we would take the baby off the milk, cleanse it out thoroughly for a day or two, and instead of changing the food or even the formula begin with it again. This course might have to be repeated several times during the heated term.

It is a bad practice to give sterilized milk for too long a period for fear of producing scurvy, and my practice is as follows: Sterilize during the summer, pasteurize in the spring and fall, and give raw milk during the winter months. During the period of sterilization it might be well to give a little orange juice, and by close observation you can easily prevent scurvy. I have yet to see a case among my patients.

Of course it is necessary to have a rigid milk inspection in all cities. On this latter point too much cannot be said, but I trust I have outlined a way in which infants can be properly fed and their health preserved even under the present insufficient sanitation of the general milk supply.

AN EFFECTIVE FORMULA FOR CATARRHAL CHOLANGITIS AND ITS CONGENERS.

BY CHARLES GILBERT DAVIS, M.D., CHICAGO., ILL.

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For a number of years I have been especially interested in the medical treatment of diseases of the liver and gall-bladder, and while the surgical literature upon the subject of gall-stones is voluminous, not so much has been written upon the purely medical treatment of such conditions.

Twenty-five years ago I began the use of salicylic acid in various pathologic conditions of the liver, and have ever since made use of this drug with satisfactory results. I have found it very satisfactory, particularly in combination with certain other drugs, as a cholagogue and antiseptic whose effect is prolonged throughout the alimentary tract. In catarrhal cholangitis, with and without the formation of concretions, I have had the best of results from the use of the following formula:

Phenolphthalein, ⅛ grain;
Acid sodium oleate, 1 grain;
Salicylic acid, pure, 1½ grains;
Menthol, 1 grain.

Mix and make one pill.

I believe that many cases ordinarily considered amenable only to surgical intervention can be satisfactorily treated at the patient's home by the use of this formula. My experience with it has been so satisfactory, not only in the cases cited in this paper, but in others, that I am earnestly of the belief that ultimately cholangitis, with and without formation of stones, will cease to be a surgical condition, and will be amenable to satisfactory treatment through the application of such a formula as the one above referred to.

There are, however, certain things to be considered in connection with this formula, as, for instance, the salicylic acid should be the "true" acid, obtained from natural sources, and not the synthetic sort. The acid sodium oleate should be prepared with a great deal of care. Both of these medicaments are excreted by the epithelial cells lining the bile-ducts and materially assist in disinfecting the tract.

In all of my work I have made use of this formula, as manufactured by a prominent American house, who have prepared it in the shape of a pill, approximately five grains in size, covered with a thin, pink-colored sugar coating. The mass of this pill is quite soft and very easily dissolved in the stomach. The combination I have found very satisfactory, not as a purgative pill, but more as a cholagogue, concretion solvent, and biliary disinfectant. The menthol and phenolphthalein act by producing and regulating intestinal activity. The salicylic and oleic acids have a decided antiseptic action, the oleic acid also acting as a powerful cholagogue. Perhaps the relation of several cases recently occurring in my practice will be of sufficient interest as illustrating the class of cases in which I have found this formula to be of the greatest service.

CASE I.—Mrs. C., aged forty-four years, married, housewife, consulted me on April 26, 1906, stating that for several years she had been subject to intermittent attacks of indigestion. These had gradually increased in frequency and intensity. Recently her attacks had recurred about every ten days. When she called me she was suffering pain in the epigastrium, the attack being ushered in by a slight chill, followed by a rise in temperature, 102° F. I was called to attend the patient during one of these attacks, and found her skin discolored, eyes slightly jaundiced. Patient was vomiting; bowels constipated; liver congested and enlarged. On the history and examination I considered the case one of catarrhal jaundice.

I first gave small doses of calomel to free the overloaded intestines, and then directed the patient to take two of the special pills two hours after each meal, followed by copious draughts of hot water. The treatment was continued for a month, varying the dose occasionally. Her present attack was promptly amenable to the treatment, and since that time she has had no returns. Her condition is greatly improved and the jaundice has disappeared. Patient herself comments upon her sense of well-being.

CASE II.—Mr. S., aged forty-one, stock-broker by occupation, consulted me on November 9, 1906, giving the following history, which is interesting, since it shows a strong hereditary tendency to gall-stones: His mother died from an operation for gall-stones. His sister died of sepsis following an attack of gall-stones. Patient has had attacks of colic for two years, growing gradually more frequent and severe. Two prominent physicians had advised immediate operation. Patient is sallow, tongue heavily coated, breath fetid. Constant emesis. Tenderness over epigastrium and under shoulder-blade.

Diagnosis of gall-stones was made, but before advising operation I decided to try my formula. I gave two of the pills two hours after each meal-time, followed by a good-sized drink of hot water. For some weeks the attacks continued, but they began to grow lighter. The treatment was continued without intermission. At the present time he has had no return of the attacks since January 10, 1907. He is still under treatment, taking two pills at bed-time. I consider that this patient has made remarkable improvement under the treatment.

CASE III.—On January 21, 1907, I was called by Miss S., aged nineteen years, single, stenographer by occupation. Family history good. Complains of indigestion. Food distresses her soon after eating. Suffers about every two weeks from an attack of chills, followed by fever and vomiting. Constipation. Patient very fleshy, skin sallow and discolored. Eyes slightly jaundiced.

The diagnosis made was catarrhal cholangitis, and treatment consisted of the administration of two pills every night and morning, followed by large quantities of hot water. The bowels remaining constipated, two more pills were ordered two hours after each meal, making in all ten pills a day. Immediate improvement was noticed. The treatment has been continued irregularly ever since, and there has been no return of the attacks. Patient's condition is very much improved in every respect.

CASE IV.—Mrs. G., aged fifty-two years, married, housewife, consulted me on December 20, 1906, stating that she has suffered for two years from gall-stone attacks occurring irregularly about every three to four weeks. She complains of constant soreness in the hepatic region, and tenderness over the gall-bladder. She is weak and listless and has no appetite. Tongue is heavily coated, bowels constipated, skin yellow, and eyes decidedly jaundiced.

Diagnosis was gall-stones, and two pills were given night and morning, followed by a glass of hot water. Improvement not being noticed, the number of pills given daily was increased from time to time as the condition of the patient indicated. The attacks have grown less frequent and of much shorter duration. For the past six weeks patient has had no trouble and is feeling very much better. She is still under treatment, but continues to improve progressively.

CASE V.—Mr. G. L., aged thirty-five years, single, stock-broker, consulted me on November 30, 1906, stating that for six months he has been failing steadily in health. Complains of pain in the epigastrium and back. Vomits frequently. Has occasional chills and fever. His appetite is gone. His food distresses him. He has lost weight. He states that he has been treated for gastric ulcer, tuberculosis, and Bright's disease. His skin is yellow. Urinalysis shows slight trace of albumin, no casts. Bowels are alternately constipated and very loose. The skin is decidedly yellow.

Diagnosis of catarrhal cholangitis was made. My regular treatment, two pills night and morning, with a pill after each meal, followed by copious draughts of hot water, has been administered, with occasional intermissions, for four months. There has been steady improvement in all of the symptoms. Patient has gained twenty pounds in weight and feels much better in every way. Is still under treatment, but improving steadily.

CASE VI.—Mrs. G. S., aged forty-four years, married, housewife, consulted me on March 6, 1907, stating that for several years she has had stomach trouble. Has had general poor health. There has been a progressive loss of flesh. Several physicians have treated her for nervous prostration. She complains of indigestion, flatulency, and eructations of food; occasionally vomits. Has severe headaches, with pain under right shoulder-blade. Bowels are constipated. She has recurrent attacks of indigestion; tongue coated; eyes yellow. She is very thin, and there is tenderness over the gall-bladder.

Diagnosis was catarrhal cholangitis. The special pill has been administered for a month, first with two and then three pills a day, followed by plenty of hot water. There has been general improvement in the patient's condition. Bowels are now regular, appetite is good, and she digests her food well. Has gained six pounds in weight and feels much better in every way.

The formula of the pill given earlier in this article seems to warrant the statement that its administration will be of value in such conditions as cholangitis, cholecystitis, and cholelithiasis, conditions of bile stasis, either with or without the formation of concretions, and my experience bears out this theoretical conclusion.

I take pains to insist upon regulation of the food, although I do not restrict the diet too closely, simply interdicting all foods known to be difficult of digestion and all alcoholic beverages. One principal point to be carefully followed in the administration of this formula is to insist that large draughts of hot water shall be taken with the pill, for the purpose of diluting the excretions and assisting in the breaking up of any concretions that may be present.

CANCER OF THE LIP—RADICAL OPERATION.

The removal of all lymph glands which bear anatomical relation to the lip is recommended by ARMKNECHT (*Deutsche Zeitschrift für Chirurgie,* Band lxxxv), who bases his article on anatomic and clinical studies.

Anatomically, we find a close communication between the lymph vessels of the lip and the corresponding vessels on the opposite side. There is, further, communication with the submental and submaxillary glands and with the glands along the great vessels of the neck. The lymph circulation of the tongue is closely connected with the supraclavicular glands, and these may be affected when higher groups are still free. The author, following Professor Heidenhain, advises the following technique in all operations for cancer of the lip:

The lymph glands of the submaxillary region are first removed, by means of a long incision, the facial artery and vein being ligated and freed, and the submaxillary salivary gland separated from surrounding structures and removed with its duct. A second incision along the sternomastoid is made for the removal of the cervical glands, especially those following the course of the jugular vein. A third incision follows for the removal of the submental chain. The operation is extended as far as enlarged glands are found. After all possibly infected glands have been removed, the incisions are closed, and a firm dressing is applied. The cancer itself is then removed by a large square cut, followed by an appropriate plastic operation. It is important that the dressing on the neck should be tightly applied, as otherwise the skin flap is likely to separate from the underlying tissues.

Cases operated on by the above method show over 75 per cent of recoveries.

EDITORIAL.

THE NECESSITY FOR WIDE-SPREAD PREVENTIVE MEASURES IN THE STRUGGLE WITH DISEASE.

The science of bacteriology which in its earliest stages seemed far removed from any useful purpose has, as we all know, within the last three decades, not only revolutionized our conceptions of disease and our methods of medical and surgical treatment, and in this way saved innumerable lives, but it has also magnified the importance of hygiene and preventive medicine. It is daily saving more lives by arresting the spread of disease than could possibly be saved by skilful remedial measures. Further than this, the laity are becoming better educated in the knowledge of the relationship between bacteria and most of the diseases which affect human beings and animals, and are lending their aid to medical men with the same ends in view. It is one of the encouraging signs of the times that legislative bodies, both great and minor, at the present time are voting very large sums of money to be expended by competent persons to arrest all sorts of infectious maladies, and these efforts are not only crowned with success, but they are also discovering a host of sources of infection which heretofore have been unknown or imperfectly recognized. The daily papers and medical journals teem with reports of such discoveries.

In a recent issue of the *New York Medical Record* we find a statement that the Bacteriological Laboratory of the Boston Health Department has made a report showing that most of the shell-fish taken from New England waters are likely to be contaminated with sewage organisms. Clams taken along the coast from Digby, N. S., to the shoulder of Cape Cod, with only one exception, were found to be contaminated, and it is further pointed out that while in some instances cooking may destroy the organisms themselves, this process may nevertheless fail to destroy toxic materials which have a similar origin. The same issue of this journal also contains the report that an investigation on the part of the State Commission on Tuberculosis in Animals in the State of New Jersey has revealed the fact that about 40 per cent of the milch cows in the State of New Jersey are tuberculous, and furthermore, that in order to help the crusade against this disease and to lead farmers to report sick animals to the Commission, an arrangement has been made by which the full value of all animals killed by the Commission when suffering from tuberculosis is to be paid to the owner. That some such just measure is exceedingly influential and wise is proved by another item in the same journal, in which we are told that a meeting of 300 farmers, of Rhode Island and Massachusetts, was recently held in Swansea to protest against the proposed application of the tuberculin test to the herds in the neighborhood of Fall River, the Board of Health of Fall River having suggested to the State Board of Health of Massachusetts that such a test would be advantageous.

On a recent trip made by the editor of this journal to a large town in the State of New Jersey he learned that the drainage of that town was poured into a stream which a few miles below was used by a very large number of growers of celebrated oysters for the so-called fattening of the oysters; thousands of the oysters also being grown where this stream empties into the Delaware Bay. As these oysters are shipped hundreds of miles from where they are grown it is quite possible that typhoid infection is widely spread, although its origin in many cases may seem obscure; and it is manifest that the State Board of Health in New Jersey would do wisely, not only for its own population, but for people in general, if it would insist upon a proper disposal of the sewage which we have spoken of.

Finally, we read in the *Boston Medical*

and Surgical Journal of April 4 of an interesting investigation carried on by the State Board of Health of Massachusetts in regard to health conditions in industrial life. This investigation reveals the most extraordinary amount of filth in bakeries, where the workmen who are employed not only breathe an atmosphere exceedingly foul, but where it is not uncommon to find that the baking is carried on in rooms which also contain water-closets. Indeed, in one city two-fifths of the bake-rooms showed conditions thoroughly bad in every respect, and half of the bake-rooms actually contained, or directly communicated with, water-closets. It is also pointed out that not infrequently that part of the bake-shop which is seen by customers is attractive, but that part in which the bread is made is foul. Thus, in one instance, although the shop was handsomely adorned and tastefully decorated, the bakery back of it had a broken ceiling and a dirty floor, in the cracks of which was much accumulated dirt. Around the sink from which the water was obtained the dirt was especially noticeable. The room was badly lighted, and a trap-door led to a cellar in which foodstuffs were stored, and which also contained various kinds of dirt and the foulest of water-closets. In some instances persons were seen who were evidently suffering from pulmonary disease, and in one instance the inspector was told that the baker "raised something" and frequently spat upon the bake-room floor. Further, this man's mother, four sisters, and two brothers had all died of consumption, and the man himself works in a dark, unventilated cellar from half-past four in the morning until three or four o'clock in the afternoon.

These facts emphasize the good hygienic results which can be achieved by properly directed efforts, and the need not only of inspection but of laws which will enforce sanitary conditions in every pursuit which is connected with the comfort and feeding of the population of great cities and country towns.

The extraordinary results which have followed the campaign against tuberculosis, in the reduction of its morbidity and mortality, and which are familiar to most of our readers, is another instance of what preventive medicine can do, a result which has been fully equaled by the control of yellow fever through the investigations of surgeons in the United States army.

Finally, attention may be called to the excellent results which have followed the crusade against uncinariasis by army and public health surgeons in Porto Rico, where uncinariasis, to use the words of Ashford and King, is not only an interesting medical question, but an all-absorbing social and economic one. These surgeons state that at least "750,000 of the inhabitants of Porto Rico" are infected by this parasite, and that 70 per cent of this number are suffering in some degree from the effects of it, which in most instances is manifested by an anemia bearing from 40 to 45 per cent of hemoglobin. They also estimate that from 5000 to 7000 persons die annually in Porto Rico from this cause. It is encouraging to know that while as yet no very great diminution in the morbidity or the mortality of this infection has yet been accomplished, a thorough and complete understanding of the mode of infection has been reached, adequate methods of disinfection have been determined, and fairly adequate means of treatment after infection have also been tried and found efficacious.

A NOTE IN REGARD TO THE VALUE OF PHYSIOLOGICALLY TESTED DRUGS.

The highly commendable wave of enthusiastic effort on the part of physicians and pharmacists which is now sweeping over the country for the elimination of unethical products, while it may be in some instances excessive, is, in association with the Pure Food and Drugs Act, producing results which could not have been obtained by other means through many years of effort, and is serving to emphasize facts which have been known to cautious and up-to-date members of the medical profession for many years. One of the most important of these facts has been the recognition that many of the pharmacopœial processes, while in the aggregate correct when

employed in the preparation of crude drugs of known consistency, have been extremely faulty when used in connection with some of the most important drugs which are commonly employed by physicians. While the Pharmacopœial Committee of Revision has recognized in the last edition of the Pharmacopœia many competent tests for determining the constitution of some important remedies, such, for example, as nux vomica, it has not found it possible to discover any chemical means by which such important drugs as digitalis, ergot, veratrum viride, strophanthus, and a number of other substances can be properly tested. As it is the function of the Pharmacopœia to recognize methods which are well-established rather than to act as a pioneer in new fields, so it has been the function of several progressive manufacturers for a number of years to subject these important drugs to physiological tests made upon the lower animals, and any one who has failed to compare the variable results which he obtained from untested drugs with the accurate results which he obtained from tested samples can have no conception of the satisfaction which the use of such products brings to the anxious practitioner.

In this connection we notice with much interest a series of experiments which have been carried out by Dr. Hatcher, which he records in the *Journal of the American Medical Association* of April 6, 1907. His investigation related particularly to the question of the physiological activity of various samples of tincture of strophanthus, the tests being made upon the lower animals. It is interesting to note that these tests, while not of very great accuracy, all tended to show that most of the tincture of strophanthus which is on the market is physiologically active, and Dr. Hatcher believes that his investigations indicate to the practicing physician that as a rule he will get more constant effects when he prescribes tincture of strophanthus than when he prescribes tincture of digitalis, this conclusion being arrived at, first, because of the facts reached in his investigation, and secondly, because it is a well-known fact that digitalis leaves rapidly diminish in potency after they have been kept a number of months, even if the circumstances are favorable; whereas the same degenerative changes do not take place in the seeds of strophanthus.

We have more than once expressed our surprise that physicians who are content only to use the best of steel in surgical operations should be satisfied to employ any galenical preparation to relieve critical states which may be dispensed by any druggist, it being a well-known fact that commercial methods govern the production and sale of crude drugs quite as much as they govern the production and sale of all other articles which are to be found in the markets of the world. As most of the skill of a physician, after making a diagnosis, is exercised in determining the exact dose of a given remedy which is needed by an individual patient, it is essential that all galenical preparations like tinctures and fluid extracts should be as nearly as possible of an identical strength if his conception of quantities and doses is to be of any value to his patient.

FLIES AND DISEASE.

It has long been known by many persons, who are interested in hygiene and sanitation, that insects are far more frequently the disseminators of disease than most people think, but since the discovery that malarial fever is always transmitted by means of the mosquito and that the same methods of transmission hold in connection with yellow fever, this matter has been forced upon the minds of many who heretofore have ignored certain self-evident facts. Within the last few years a very considerable number of bacteriological and other researches have proved beyond all doubt that many articles of food are contaminated by the transmission of filthy material to food by various kinds of flies. In one particular epidemic described by Stokes, it was found that the milk was contaminated by flies that came from a neighboring privy, and several researches have shown that cockroaches aid in the spread of the bacilli of Eberth in a similar manner. Then, too, we have the interesting experi-

ments of Coplin, in which he showed that flies, after walking over typhoid excreta, laid a trail of typhoid bacilli over culture surfaces wherever they trod.

In one of the recent numbers of the *Lancet* attention is called to the fact that both in Liverpool and Glasgow a crusade is about to be introduced to diminish the number of common house-flies, and Ross and Newstead, with this end in view, have studied the life history of the common fly not only during summer months, but also during winter months as well, with the object of being able to destroy them in the egg or in the larval stage. As a matter of importance it is pointed out that the common wasp is a very active enemy of the ordinary house-fly, and therefore is an ally of man in this direction, a fact which is not generally known and which should prevent the destruction of wasps unless the place where they build their nest is distinctly one in which they may cause disaster to children. Indeed, it is stated that the wholesale destruction of wasps in some places threatens a plague of flies. Much may be done in preventing the multiplication of flies by seeing that the material upon which they feed and multiply is immediately destroyed by fire or other effective means. With an increasing appreciation on the part of the laity of the damage which these creatures can produce, it is hoped that the spread of disease through their aid will be materially diminished.

THE APPROACHING CONQUEST OF CANCER.

Under the above title there appears in the *Medical Record* of February 16, 1907, an article by Robert Bell, of London, which because of its title attracts instant attention, but which on perusal proves itself to be not merely an unprofitable discussion but one absolutely misleading in its teachings. Nor would this be worthy of comment excepting for the fact that such teachings, if accepted, are likely to result in preventable suffering and loss of human life. Thus Bell states that it must be obvious to every observer how miserably surgery has failed to give relief in cancer. This is a statement which with a germ of truth carries a huge load of misrepresentation. In advanced cases it is quite true that surgery can offer only the removal of an obstructing, disfiguring, or offensive growth, but the attainment of one or all of these ends is the means of accomplishing an enormous amount of relief. In beginning cases surgery not only relieves but absolutely cures, nor is there a single agent yet advanced, aside from operation, which for an instant can be compared in efficiency with this method of treatment. Because of the natural dread which all people have of operation of any kind, a dread happily diminishing with the advent of local anesthesia, skilful anesthetists, and a rational humane after-treatment, it is the tendency of the individual to grasp at any means of help rather than the knife. The most hopeless cases with which the surgeon has to contend are those which have wasted weeks, months, or years in futile efforts at cure by other usually far more painful and infinitely less successful means.

Bell says that two circumstances have impelled him to state his views on the approaching conquest of cancer: first, the optimistic articles appearing in the lay press, and secondly, a patient coming to him with recurrence of cancer in the right side after two extensive operations had been performed within one year, and when the condition of the parts was infinitely worse than it would have been had the breast been left alone. This patient had also been subjected to the trypsin treatment, during which the second breast had become involved. None the less, Bell states that he is convinced there is value in the trypsin treatment as an adjunct to other methods. Indeed, the central thought of his communication seems to be that the approaching conquest of cancer is based on the judicious employment of trypsin, together with measures directed toward insuring by judicious means a healthy condition of the neighboring tissue, holding that thus the colony or colonies of malignant cells are rendered innocuous and disappear by absorption, whilst the vitality of the tissues surrounding will not

be diminished as would be the case if the disease had been removed by the knife. Bell apparently believes that the most important predisposing factor in the development of cancer is autotoxemia of intestinal origin. He holds that the prevention of cancer is within the grasp of any one who will implicitly obey those laws which nature has so explicitly formulated for our guidance. Indeed, he definitely states that it is on restoration of the functional activity of the thyroid gland, together with judicious diet, abundance of fresh air, and careful attention to the hygienic condition, that we must depend for recovery and maintenance of vigorous and healthy cell life. From which the logical sequel seems to be that if these conditions be fulfilled cancer will never develop.

The article as a whole appears as an ingenious argument with a demonstration completely satisfactory to its author that cancer is due to intestinal fermentation and absorption as such. It would scarcely require comment were it not for the fact that it is likely to discourage those suffering from cancer from the only means of help and at a time when such help is likely to prove curative.

As for the conquest of cancer, the signs of its near approach are no more convincing than they were twenty years ago.

FIBROUS ENLARGEMENT OF THE PROSTATE.

By this heading, which is misleading because the prostate may be actually smaller than normal as judged by palpation, there is understood to be present a condition which interferes with micturition, not because a bulky tumor is encroaching upon the prostatic urethra, but because there is associated with this fibrous enlargement a ring-like induration due either to hypertrophy or to fibroid degeneration of the musculature occupying the position of the internal vesical sphincter. The symptoms of enlarged prostate—*i.e.*, slowness in starting micturition, absence of force to the stream, with interruptions, failure to completely empty the bladder, and ultimately constant dribbling because of the always overful bladder—are likely to be even more pronounced than when they are caused by true adenomatous enlargement of the gland, and since the indications for operation are founded on the degree and progression of obstruction, the need for surgical intervention is even more urgent than in the case of the usual prostatic overgrowth.

The complete removal of these small prostates is much more difficult than the shelling out of the adenomatous growths commonly characterized as prostatectomy. Whilst in these cases of small prostate accompanied by contracture of the internal vesical sphincter prostatectomy accomplishes a cure, it does so not because the prostate is removed but because the continuity of the ring at the neck of the bladder is destroyed. Hence it follows that under such circumstances the Bottini operation, preferably through a perineal incision, is advisable.

Pardue (*Clinical Journal*, April 17, 1907), writing on the general subject of enlarged prostate, particularly recommends in this class of cases a prostatectomy, and notes that this operation gives most excellent results. His method of procedure is as follows: The patient is placed in the lithotomy position, the grooved staff is introduced into the urethra, and a two-inch cut is made through the perineal raphe down to the staff, thus opening the urethra. The author cautions against incision of the membranous portion of this tube since this implies injury of the external vesical sphincter, an important muscle in the control of the urine after prostatectomy. A director is run along the groove in the staff into the bladder, and the staff is withdrawn. The right forefinger in then inserted into the bladder along the director, and the membranous urethra readily dilates to admit the finger, but the prostatic urethra is often contracted to such a degree that it really requires considerable force to push the finger through it. The forefinger of the left hand is now passed into the rectum, and between the two forefingers will be felt the thickness of the prostatic ring or collar. The mucous membrane of the pros-

tatic urethra is split with the right forefinger, and between the finger in the rectum and that in the urethra the prostatic collar is split toward the rectum to any degree desired. The splitting should be carried on until the entrance to the bladder is perfectly loose and free, the finger slipping in and out without the slightest resistance. The collar may be so dense as to require touching with a probe-pointed knife. Through the perineal wound there is passed into the bladder a stiff drainage-tube about the size of the thumb, this with dressings being held in place by a T-bandage. At the end of the week the stiff tube is exchanged for one of somewhat smaller caliber. The rubber tube should be worn for another week and then removed, the perineal wound being allowed to heal.

Pardue notes that a little incontinence is present after the removal of the tubes, but this soon passes off if the compressor urethræ has not been cut. The author observes that he has several cases in which the operation was performed more than five years ago in which the results are perfect.

Doubtless there is scarcely an operating surgeon who will not recall the fact that when operating upon the bladder with enlarged prostate and beginning symptoms of obstruction these symptoms have been entirely relieved after perineal section. Following this operation the surgeon practically always introduces the finger into the bladder, thus producing the degree of dilatation or even actual tearing which does away with the narrowing incident to the contraction of the internal vesical sphincter. The same end may be attained more easily and with equal safety by the introduction of a dilating instrument of sufficient power and caliber to be stretched up to 80 or 90 of the French scale, thus entirely overcoming the resistance of the internal vesical sphincter. Stretching up to 40 or 50 is practically unavailing, nor is it safe to apply even this degree of distention to the compressor urethræ muscle.

REPORTS ON THERAPEUTIC PROGRESS.

THE STEM PESSARY FOR AMENORRHEA AND DYSMENORRHEA.

CARSTENS in the *Journal of the American Medical Association* of December 29, 1906, writes as follows as to the indications for the use of the stem pessary. It probably makes no difference what kind of stem is used—rubber, glass, or metal. The author at present prefers the rubber (Chambers) pessary. It is painful to introduce. The uterus must be dilated; if there is diseased mucous membrane it needs curetting, and therefore it is necessary to give an anesthetic, as a rule. The writer keeps his patients in bed two or three days, and then they can get up and be about at their usual vocations.

If the stem is put in alone, it will often be forced out sooner or later, so a Hodge-Thomas pessary is put in to throw the uterus forward and thus prevent the stem from coming out. It is not necessary to do this in all cases, but it is best as a rule. If there is discharge, douches may be used, but ordinarily this is not needed. Never take out the stem and reintroduce it. It may be left in sometimes two or three years without trouble. The author permits his patients to travel all over the country and to Europe, and they have never had any trouble except in one case, in which pain suddenly developed, and a physician was called in to remove it. In one or two instances the patients insisted on having the instrument removed too soon, and it had to be reintroduced. This was the author's earlier experience. Now he does not take them out sooner than three or four months, and six months or a year is a great deal better. They absolutely cause no pain or distress, and women do not know they wear them unless they are told.

The greatest precautions must be taken in excluding cases of inflammation of the

tubes and ovaries and pelvic inflammations in general, because latent cases of tubal or ovarian abscesses may be lighted up by the introduction of a stem pessary and serious consequences ensue. If adhesions have taken place and the uterus is pulled down and dilated, rupture may take place of dermoid tumors, even of an intestine or of the bladder. In such cases, with amenorrhea or dysmenorrhea, an abdominal section or some other operation is probably required. The stem is not indicated there. The stem is simply for cases of slight troubles from the surgeon's standpoint, but most distressing to the patient and trying to the general practitioner.

Finally, the author sums up by saying that the stem pessary is the most useful mode of treatment, and is indicated when we have to bring on a regular menstruation in cases in which it is absent or occurs at long intervals. The same may be said of those cases in which the flow is scanty and various nervous symptoms are produced, a condition often found in fleshy women. It is also valuable in dysmenorrhea, when there are no other pathological conditions, except that state commonly called neuralgia, or when we find a small uterus, or especially a small cervix, a condition often found in middle-aged, unmarried women who have for five or ten years menstruated normally. In slight flexions or displacements with recurring stenosis producing sterility it is valuable, and will sometimes cure the last-named condition.

Contraindications are acute or latent pelvic inflammation of whatsoever kind it may be. The author especially and emphatically warns against this condition. If there has been inflammation of the tubes or ovaries, or if there are adhesions, the stem pessary should not be used. The greatest care must be exercised on this point.

Any general practitioner is able to introduce a stem pessary; no specialist is required. This article is simply written for the benefit of the general practitioner who has so much trouble with the kind of cases described.

In conclusion the writer says:

1. The stem pessary will generally cure amenorrhea after all other means have failed.

2. It will develop an infantile uterus, enlarge a prematurely atrophied one, and restore a superinvolutional womb to a normal condition.

3. It will cure most cases of intractable dysmenorrhea, when no special pathological condition can be found.

4. If worn for six months or a year it sometimes cures sterility.

5. All inflammatory conditions about the pelvic organs must be rigidly excluded before it is used. The same septic precautions should be taken during its introduction as a surgeon would take with the most complicated case of abdominal surgery.

THE TREATMENT OF PSORIASIS.

MacLeod states in the *Clinical Journal* of December 19, 1906, in speaking of the therapy of psoriasis, that of the various preparations of arsenic the liquor arsenicalis is the most generally employed, beginning with small doses of 3 minims t. i. d. and increased to 10 minims t. i. d. according to toleration. This dosage is given until the eruption disappears, unless toxic symptoms supervene, when the drug is at once stopped. The liquor arsenicalis has also been given in hypodermic injections of 3 minims in 5 minims of water daily; though it is possibly a more efficacious method of employing the drug than by giving it by the mouth, it has the great disadvantage of being painful.

In Vienna the favorite method of prescribing the drug was in the form of the "Asiatic pill," which contained 1/12 grain of arsenous acid. The late Professor Kaposi used to prescribe one to four of these, three times daily, and continue to do so till the patients had taken about six hundred of them, only intermitting them when toxic symptoms arose. Cacodylate of sodium, an organic compound of arsenic, is now extensively used in France in doses of ¼ to 3 grains of the salt by the mouth,

or by hypodermic injection. These doses are large, considering that one grain contains about as much arsenic as a drachm of liquor arsenicalis, and should be used with caution.

The author refers in his paper to the various methods of administering arsenic somewhat fully, because no description of the treatment of the disease can be said to be in any way complete without doing so, but he himself has found the drug so inconstant in its action that he has begun to lose faith in it, and to wonder whether in the cases which have seemed to do well while it was being taken the improvement did not take place in spite of the arsenic rather than as the result of any specific action on its part.

Salicin and the salicylates have been recommended as substitutes for arsenic, and especially salicin, as it is less liable to disagree than salicylate of sodium. Dr. Radcliffe-Crocker, who strongly advocates its employment, considers that it acts as a microbicide, breaking up into salicylic and carbolic acids. It is given in doses of 10 grains t. i. d. and gradually increased, and where depressing symptoms and headache are caused by the drug it is combined with small doses of tincture of nux vomica.

Various alkalies have been employed in psoriasis and in gouty and rheumatic patients with undoubted success; of these liquor potassæ 10 minims t. i. d., acetate of potash 10 to 30 grains t. i. d., and iodide of potassium in large doses have been chiefly recommended.

Thyroid extract was introduced some years ago by Dr. Byrom Bramwell for the treatment of psoriasis, and has been given an extensive trial since. Though it is believed by various observers to be occasionally efficacious, the serious symptoms which it may produce, especially in elderly people and those with weak hearts, more than counteract its doubtful utility.

In brief, it may be said that there is no such thing as a specific drug for psoriasis, and several of the so-called specifics have probably got greater credit than was their due from the fact that they were being used at a time when the disease was naturally undergoing remission. At the same time it must be conceded that salicin and arsenic may have a beneficial action, perhaps directly by acting as microbicides, or possibly indirectly through having a tonic action on the nervous system.

Local Treatment.—Although in the general treatment of psoriasis success depends much more on the judicious application of general principles than on the slavish employment of any of the vaunted specifics, with regard to the local treatment we have certain definite indications, for here we are dealing largely with effects which in the light of their histology are capable of removal by suitable remedies. Hence it is that the local treatment plays a more important part in the therapy of psoriasis than does the general treatment. The first indication in the local treatment is the removal of the scales. If the disease is at all extensive this can be done best by means of baths. A daily warm bath (95° F. to 100° F.) may be given and the individual patches scrubbed with soft soap on a piece of flannel or with soap liniment (saponis viridis two parts, spiritus vini rectificati one part), the latter being especially valuable in the removal of scales from the scalp. The bath water may be made more effective by the addition of 6 ounces of sodium bicarbonate to 30 gallons of water. The patient should remain in the bath for about half an hour, and after coming out of it and being dried each patch should be thoroughly rubbed with a two- or three-per-cent salicylic acid ointment, or if the lesions are painful, simply with vaselin or olive oil.

Where the lesions are not so numerous, and are of a chronic, resistant type, with thick, adherent scales, more powerful measures for the removal of the scales may have to be resorted to. The lesions should first be scrubbed with soft soap and hot water, next rubbed with salicylic acid, 3 per cent, in alcohol, and finally dressed with lint soaked in olive oil, applied continuously under the oiled silk.

Other methods have been suggested, such as wet packs and Turkish baths, but they

are not so effective as the warm baths and soft soap.

After the removal of the scales the next indication is the employment of one or other of the reducing agents with the object of trying to improve cornification, and so diminishing the tendency to the formation of scales. These reducing agents are said to act by subtracting oxygen from the tissues. Of these the most valuable are tar and chrysarobin, and of less importance pyrogallol, naphthol, salicylic acid, resorcin, and mercury.

In the choice of the proper remedy much care and judgment is necessary, for several of them are powerful irritants and must be used with great caution to avoid producing serious inflammation, and are only applicable to cases of a chronic type. In psoriasis also, as in almost every form of skin disease, each case must be considered and treated on its own merits, and even different patches of psoriasis in the same case may require different treatment.

Where the case is unusually irritable and the lesions much inflamed, before using any of these reducing agents it is necessary to diminish the inflammation. This may be done by dressing the affected parts continuously under waterproof with lint soaked in a solution of glycerini plumbi subacetatis (1 in 8) or applying the calamine cream (prepared calamine ʒij, carbolic acid min. x, olive oil ℥j, lime-water f℥j). In very irritable cases bran baths are of service.

THE TREATMENT WITH ARGYROL SOLUTIONS OF THE PURULENT OPHTHALMIAS.

The *Ophthalmic Record* for December, 1906, contains an article by BRUNS in which he reaches the following conclusions:

1. The treatment of gonorrheal conjunctivitis with argyrol is efficient, provided it is instilled often enough (every 15 to 30 minutes) to keep the diseased tissues practically immersed in the solution.

2. The instillations must be continued day and night so as to render the immersion constant and afford the gonococci no chance of unchecked activity.

3. Until the formation of pus has wholly or virtually ceased the eye should not be irritated by any manipulation or the instillation of any other substance.

4. The less virulent course of the disease when so treated confirms the belief that more strenuous methods often abrade the weakened epithelium of conjunctiva and cornea and open ways of invasion to the gonococci.

5. As always, the best results are had when the remedy is thoroughly applied in the beginning of the disease. This can be done no matter how swollen or brawny the lids; a thing not possible with less diffusible liquids or with those which must be applied to the everted lids. It is excusable to repeat that eversion is dangerous in the early stage when the epithelium is softened and pus formation still profuse.

6. Under this plan corneal ulcers are uncommon, and when they do appear are held in check and do not produce wide-spread destruction. Corneal ulceration, then, far from forming a contraindication, gives an additional reason for its vigorous employment.

7. Argyrol is not a powerful astringent; therefore, as soon as pus formation has ceased and the lids have become flaccid, $AgNO_3$ solutions should be applied to the everted lids once daily to hasten the reduction of the conjunctiva.

Soaking corneal ulcers once a day in a 50-per-cent solution of enzymol seems to cleanse them, as well as the conjunctiva, and thus promote recovery. During this period the frequency of the argyrol instillations should be gradually lessened.

8. In monocular cases the safety of the unaffected eye is secured by instilling the argyrol solution but one-half as often as in the infected eye.

9. The method is far less painful, especially in the acute stage, than any other yet proposed. This is an advantage not merely of good feeling, but enables us to treat many who, even at the cost of an eye, refuse to tolerate severer methods.

10. The author has never observed argyrosis following the use of argyrol.

THE MEDICAL TREATMENT OF GRAVES'S DISEASE AND HYPERTHYROIDISM.

STENGEL in the *Pennsylvania Medical Journal* for December, 1906, writes on this topic. A few general conclusions will serve to summarize what the author details.

1. The syndrome of hyperthyroidism which is met with in its most characteristic form in typical cases of Graves's disease also attends mild and often transient enlargements or other pathological lesions of the thyroid gland. While distinguishable from ordinary Graves's disease by accurate diagnosis, and while as a rule entirely different in their clinical course and prognosis, these cases must be included with Graves's disease under the more general heading of hyperthyroidism, because in any case a gradual transition and a termination in a severe form is possible.

2. Hyperthyroidism is due to increased and perhaps perverted secretion of the gland, and is therefore prompted by increased vascularity of the gland and hypertrophy of its secretory structure. Methods of treatment designed to reduce vascularity or to limit secretion functionally or by actual destruction of glandular substance should be investigated hopefully.

3. General medical treatment, including change of scene, rest, diet, and tonics, often benefits milder cases and may mitigate symptoms even in the severe forms. Iron and arsenic; digitalis, strophanthus, and convallaria; atropine, ergot, and mild currents of faradic or galvanic electricity, are useful respectively in improving the blood, the general and the local circulation.

4. Iodine is a dangerous drug, and thyroid extract should not be employed. In some cases seemingly good results from the use of thyroid extracts have been reported. The explanation of this is difficult.

5. Three forms of specific treatment have been suggested: (*a*) By the production of antitoxic substances; (*b*) by the preparation of cytolytic substances; and (*c*) by the use of *x*-rays. The statistical evidence in favor of the antitoxic sera, such as the antithyroidin of Möbius, the milk of thyroidectomized goats, and the like, is very encouraging but cannot yet be fully accepted. The results obtained with the cytolytic serum of Rogers and Beebe are equally or even more encouraging, and the treatment seems to rest upon a scientific basis. The methods of preparing the serum, however, require refinement and elimination of certain defects. The *x*-ray treatment has not been sufficiently used to justify a final expression of opinion as to its merits.

ACIDIFIED MILK IN INFANT FEEDING.

MORSE and BOWDITCH in the *Archives of Pediatrics* for December, 1906, write on this subject, and in concluding recommend buttermilk, buttermilk mixtures, and milk mixtures acidified with lactic acid bacteria as safe foods for infants, whether well or ill. Infants can thrive and gain on them for considerable periods of time. The use of a routine buttermilk mixture, as has been the custom in the past, is not as rational as that of an acidified milk mixture modified to suit the individual case, or of buttermilk modified by the addition of cream and milk-sugar. The preparation of such acidified mixtures, while not difficult, is not very practicable for private work. These mixtures and buttermilk are almost always taken well. The results obtained from acidified milk mixtures in cases of malnutrition and chronic disorders of digestion are not materially different from those obtained from the use of other preparations of milk of the same percentages. They are, however, worthy of trial in cases of intractable disturbances of digestion, because some cases do much better on them than on other forms of modified milk.

Practically the same, and in some instances better, results are obtained in these conditions with pasteurized buttermilk as with acidified milk mixtures. This fact suggests strongly that the good results which are obtained with buttermilk mixtures are due to their low fat content in combination with a large amount of proteid in an easily digestible form, and not to the acidity or to the action of the bacteria. Pas-

teurized buttermilk gives very good results when employed as the first form of milk food after the initial periods of water and starchy diets in acute intestinal indigestion and infectious darrhea. It is possible that unpasteurized buttermilk will give even better results because of the action of the lactic acid bacteria on the intestinal flora. Fat-free milk with pure cultures of lactic acid bacteria ought, however, to be safer and more reliable than commercial buttermilk.

DIABETIC FOODS.

In the *Report of the Connecticut Agricultural Experiment Station* for 1906 we find interesting information on this subject. The necessity of excluding so far as possible from the diet of diabetic patients sugars and substances, such as starch and dextrin, yielding sugar with the digestive juices, has led to the introduction of saccharin and other coal-tar derivatives and preparations containing, or purporting to contain, no starch or starch derivatives, or else diminished amounts of these substances. The craving of the patient for sweets is sometimes satisfied, at least temporarily, by the use of saccharin, a coal-tar product several hundred times as sweet as sugar, and which is free, so far as diabetes is concerned, from the injurious properties of sugar; but the preparation of a harmless yet palatable substitute for bread requires a special flour containing a relatively small percentage of starch and special methods of bread-making.

So-called diabetic flours may be made from wheat flour by washing out a portion of the starch and drying. If the process of washing is carried far enough, crude gluten is obtained containing very small amounts of starch, and from this, after drying, may be prepared gluten flour. Crude gluten, obtained as a by-product in the manufacture of wheat starch, is said to be utilized for the preparation of gluten flour as well as a concentrated cattle food. The removal of so large a proportion of the starch materially alters the physical characters of the flour, and the bread made from it is quite different from ordinary bread. Most of the commercial diabetic flours, however, are not true gluten flours, since they still contain a considerable amount of starch—some of them so much as to render them positively dangerous for diabetic patients.

Not only all of the cereal grains but also most of the seeds of the legumes, such as field and Lima beans, peas and lentils, contain large amounts of starch and must be avoided by diabetics; the soja or soy bean, however, is a striking exception, as it contains, when ripe, no true starch, or only traces. This leguminous seed is an important food in Japan, and is being used in this country for the manufacture of meal for the use of diabetics.

The peanut, another leguminous seed, although very rich in oil, contains about 11 per cent of starch, sugar, and dextrin, of which about half is starch.

Most of the nuts, including walnuts, Brazil nuts, almonds, and filberts, since they contain no starch and only small amounts of sugar and dextrin, but are rich in protein and oil, are valuable additions to the diet of diabetics. Almond meal is used in the preparation of various biscuits and bread substitutes. The chestnut is a notable exception among nuts, in that it is rich in starch and poor in fat, the composition of the shelled nut being much the same as that of wheat flour; it is therefore entirely unsuited for the use of diabetics.

Casein prepared from skimmed milk is used for making a kind of bread entirely free from starch.

In making out dietaries for diabetic patients it should be borne in mind that starch, sugar, and dextrin are all about equally injurious, since starch and dextrin are converted by the saliva and pancreatic juice into sugar (chiefly maltose), and it is the sugar, not the starch itself, which is directly injurious. For example, changing a portion of the starch into dextrin, as is done to some extent by toasting bread, does not render it less injurious—in fact it actually hastens the formation of sugar through the action of the digestive juices, since dextrins are intermediate products in the

change. For this reason the sum of the percentages of starch, sugar, and dextrin, and not the starch alone, should be considered in valuing diabetic preparations.

SCARLET FEVER: ITS TREATMENT AT THE HOSPITAL FOR SCARLET FEVER AND DIPHTHERIA PATIENTS.

In the *New York Medical Journal* of March 9, 1907, KELLOGG tells of the therapy of scarlet fever as practiced at this hospital in New York.

General Management of the Disease.—Patients are clad in light night robes, and during cold weather wear an undervest with long sleeves. This is insisted upon, as most patients are careless about exposing their arms, neck, and chest.

They are kept in bed until the temperature has been normal for ten days, although a minimum period of three weeks is required. By following this general rule the tendency to heart and kidney complications is much diminished.

The change from the recumbent to the upright position is made gradually, allowing first one pillow, then two, three, and four, then a reclining chair, then an upright chair, after which they are allowed to stand in getting from the bed to the chair, and then to walk around the bed.

The time of discharge is determined by the completion of desquamation, which averages about six weeks. A minimum period of five weeks quarantine is required.

Diet.—During the first three weeks the diet consists of milk, after which farinaceous foods are gradually added, and later nitrogenous foods, the latter making only a small proportion of the diet until the patients are well along in the fifth week. The diet list is as follows:

Milk diet: Milk, kumiss, matzoon, junket. When specially ordered, malted milk, cream mixture (cream ℥iv, milk-sugar ℥ss, water ℥xij).

Cream soups (tomato, pea, celery).

Farinaceous diet: In addition to the milk diet and cream soups give arrowroot, corn-starch, rice gruel, rice milk, rice cream, cracker gruel, bread jelly, milk porridge, barley jelly, milk toast, other cereals.

Soft diet: In addition to the stated diet give once daily poached egg, gelatin preparations, purée of green vegetables, tea, coffee, or cocoa.

Special diet: In addition give once daily sweetbreads, calves' brains, squab, lean fresh fish.

Extra diet: In addition give once daily scraped beef, chicken, meat soups, green vegetables, and tea, coffee, or cocoa twice daily.

General diet: Give a general mixed diet, including red meats, twice daily; tea, coffee, or cocoa three times daily.

A great effort is made to give the patients as much variety as possible and at the same time make the changes and additions gradually.

Beginning as soon as possible after admission to the hospital all adults are given eight ounces of milk every two hours from 6 A.M. to midnight. To children a proportionately smaller amount is given. In a few cases the difficulty of feeding children is overcome by gavage.

Water.—The importance of giving water freely cannot be overestimated. The surprisingly low percentage of kidney complications in this hospital, which so far as the author has been able to ascertain has not been equaled by any other institution in the world, is attributed justly to the large quantities of water the patients drink. Care should be taken, however, not to overdistend the stomach by giving too much at any one time.

It is his custom to give all adult patients 8 ounces of water every two hours, beginning at 7 A.M. and ending at 11 P.M., thus allowing one-hour intervals between the administration of milk and water. To children a proportionately smaller amount is given.

Urine.—Daily examinations of the urine are made, and it is not unusual to find the specific gravity standing at 1.004 or 1.006, while 1.010 or 1.012 is considered an indication for increasing the quantity of water.

Under this treatment the transient albuminuria which we are taught to expect in the early stages of the disease is an exception rather than the rule, and acute nephritis is very rare.

The Care of the Skin.—The popular method of oiling the surface of the body, while it tends to prevent desquamated epithelium from flying about and by its softening effect will help to loosen the dead skin, is often used over too long a period. It is important that the excretory function of the skin shall reassert itself as early as possible so as to relieve the extra strain thrown upon the kidneys, and the long-continued use of emollients after desquamation is well advanced is a mistake. It is the custom of the author to limit the oiling of the body to the early days of the disease, and then to use it only in those cases in which the skin is much irritated or pruritus is a prominent symptom. For this purpose cacao butter is excellent.

If the skin is so irritated as to cause considerable pruritus, a most soothing effect can be obtained by sponging with the French bran bags. The calamine lotion used by the dermatologists is also helpful in cases of marked irritation.

℞ Pulv. calaminæ, ℥j;
Zinci oxidi, ℥ss;
Glycerini, mins. xv;
Aquæ rosæ, f ℥j.
M.

The daily warm bath may be permitted from the onset of the disease, although little friction should be used in drying the body. The bath often has a most soothing effect on the restlessness and delirium in the early days of the disease. Special efforts directed to detaching the skin from the general body surface do not shorten the period of quarantine, since the soles of the feet are far behind the general body surface in desquamating.

With adults the question of how to hasten the desquamation of this thick, callous skin must always be considered, for if no attention is paid to it the feet will often take eight or ten weeks to desquamate, while it can usually be brought to a termination in six weeks and sometimes in five by beginning treatment early. The method which the author has found most successful is to soak the soles of the feet once or twice daily in a strong solution of washing soda for ten minutes, and then in hot soap-suds for the same length of time, after which they are rubbed vigorously with a rough towel. This is continued until the skin shows signs of loosening, after which soap and water only are used.

The Care of Nose, Throat, and Nasopharynx.—Serious involvement of these cavities, and continuous absorption, is often met with, a condition which keeps up the temperature and conduces to kidney congestion as well predisposing to otitis media and its sequelæ. Here cleanliness is of extreme importance and must be insisted upon, even at decided discomfort to the patient.

The treatment of the throat by means of gargles and sprays is inadequate if the involvement is at all extensive, although a certain amount of relief will be obtained from the local application of hydrogen dioxide, solutions of potassium chlorate, or of tincture of ferric chloride. In nearly all cases the author makes use of a douche or irrigation.

Normal saline is the solution ordinarily used. Occasionally when the throat is dry and glazed, a solution of sodium bicarbonate (one tablespoonful to a pint of water) is preferred to soften tenacious mucus or start secretion.

Boric acid, potassium permanganate, and other antiseptic solutions possess no apparent advantage over the salt water, which not only has a soothing and cleansing effect, but will do no harm even if a considerable quantity is swallowed while the patient is being "broken in" to the treatment.

The solution is made as hot as it can be borne without discomfort, usually 110° F. at the start, with a gradual increase to 125°.

The quantity used is about two quarts; sometimes, however, it is necessary to diminish the amount, until the patients learn

to let the water flow out of the mouth without exhausing themselves by gagging and straining.

The severity of the infection plus the ability of the patient to stand the irrigation determine the frequency of the treatment. Severe cases as a rule are irrigated every two hours from 6 A.M. to midnight.

The patient, protected by a rubber sheet, is turned on one side with the cheek resting on the edge of a pus basin, and the head is lowered slightly by removing the pillow. (Infants are prepared as for intubation, by wrapping them from the shoulders to the feet in a strong sheet fastened firmly at the shoulders, elbows, wrists, knees, and ankles.) A fountain or Davidson soft-rubber bulb syringe is used. The straight tip of the syringe is introduced into the mouth in the median line and carried back to the base of the tongue, which is held down so as to expose the back of the throat. The solution is then directed with considerable force against the pharynx, or the part of the throat from which we wish to dislodge the membrane. When the mouth is filled the tube is compressed with the finger, and the patient is allowed to expel the solution into the basin. This process is repeated until the treatment is finished.

The effect of the treatment described is to relieve pain, dislodge membrane, and wash away thickened mucus more thoroughly than by any other means with which the author is familiar.

The possibility of carrying infection from the throat to the ears has been urged as an objection to this method. In the author's experience this complication has not been observed. Most cases require no other local treatment.

When an organized membrane covers the pharynx resembling diphtheric membrane, the author has found it helpful to use the following solution suggested by Dr. Odendorfer:

℞ Chloral hydrate, gr. x to xx;
Glycerin, ℥j.
M.

This can be advantageously applied to the edge of the membrane with a long glass pipette. Fifteen to twenty drops is sufficient for a treatment. It produces slight local anesthesia, thereby diminishing pain, is antiseptic, and has a decided softening effect on the membrane. Apply about twenty minutes before the irrigation and repeat as often as necessary.

Frequently it is difficult for patients to take the amount of milk and water prescribed because of the difficulty in swallowing. This is gradually overcome by the irrigations, but much temporary relief may be obtained if the patient is allowed to hold in the mouth and slowly dissolve an orthoform lozenge (¼ grain). Some complain of dryness of the throat and slight nausea after the frequent use of this drug, but the majority are much benefited.

ASTHMA IN INFANTS AND CHILDREN.

In the *Clinical Journal* of February 27, 1907, CAUTLEY tells us that the prophylactic treatment consists in bringing up the predisposed in the most suitable manner as regards hygiene and diet, and prevention of catarrhal conditions. The body should be kept warm and the apartments cool. A high, dry air, such as Mont-Dore-les-Bains in France, the Engadine, or Colorado, is more suitable than the seaside for the spasmodic condition, but where there is much catarrh it is important to choose a warm, dry climate, or seaside air and sandy soil, with the object of curing the catarrh. Places such as Bournemouth, Hastings, and the Ascot district in England are suitable. High altitudes are also unsuitable for emphysema.

The diet should be simple, nutritious, and consist of small, regular meals, avoiding all meat extracts and excess of carbohydrates, and not allowing much meat. Fruit may be given liberally. An antidiabetic diet has, in the experience of the author, proved absolutely useless. The bowels should be kept open. Attend to all local sources of irritation, and remove adenoids or enlarged tonsils if present. Keep the child in as good health as possible, devoting attention to rendering it insusceptible to dyspepsia and catarrhal conditions, and to increasing the stability of the respiratory center.

During a paroxysm of spasmodic asthma a warm bed in a room with open windows may be all that is necessary in mild cases. In more severe cases some of the following methods may be adopted: In order to induce general vasodilatation give a hot-water or vapor bath; hot fomentations or turpentine stupes to the chest; nitroglycerin, nitrites, or inhalations of amyl nitrite; chloral by mouth or rectum; or alcohol. Constriction of the respiratory mucosa can be induced by inhalation of cold air from ice in a jug or inhaler; adrenalin, 1 in 1000; the fumes of brown paper, nitre paper, the leaves of stramonium, belladonna, or hyoscyamus, or Himrod's powder. Most of these remedies are irritating, unsuitable, and injurious in the catarrhal asthma of infants, in which more benefit is derived from the inhalation of terebene, creosote, or vapor pini sylvestris. An emetic is often useful at the onset of an attack, and for this purpose the syrup or the wine or powder of ipecacuanha can be given. In older children, unable to swallow, one-tenth of a grain of apomorphine may be given subcutaneously. Emetics help the child to get rid of mucus and also act as cardiac depressants. Many cardiac depressants, such as tartar emetic and lobelia, rarely do good until they produce a feeling of nausea and faintness or collapse. Then the dyspnea at once ceases, either because of the relaxation of the spasm or the subsidence of the congestion, due to cardiac depression. Of other remedies may be mentioned belladonna by the mouth and atropine or pilocarpine subcutaneously, cocaine sprays (2 to 5 per cent) to the nose, counter-irritants to the chest, dry cupping, and occasionally bleeding. Morphine subcutaneously is very useful in bad attacks, but should rarely be employed for children.

For prevention of the nocturnal paroxysms give antipyrin, phenacetine, or bromides at bedtime, with small doses of heroin during the day.

Between the attacks treatment must be directed to the general health. A course of potassium iodide, or syrup of the iodide of iron and cod-liver oil, is advisable. Arsenic is very beneficial in cases in which there is a tendency to glandular enlargement, while strychnine and cinchona form useful tonics. Cauterization of the nose may be tried. As a general principle it is infinitely more important to attend to the general health of the child, to prevent erroneous methods of feeding, to remove local sources of irritation, and to cure the catarrhal tendency, than it is to rely upon measures for relieving or cutting short the paroxysms.

THE GREAT VALUE OF INOCULATION AGAINST PLAGUE.

The annual report for the year ending March 31, 1906, of Lieut.-Colonel Bannerman, the Director of the Plague Research Laboratory at Parel, Bombay, is one of very great value and interest. We direct special attention to the section dealing with the results of inoculation against plague.

The result of recent research into the etiology of plague, far from lessening the value of prophylactic inoculation, has rather tended to emphasize its value as one great practical means of protecting communities against the dread disease.

It is admitted that plague spreads among rats and from rats to man by means of the rat-flea (*Pulex cheopis*), and this is the sole proved means. Moreover, it has been shown in the report under reference that the plague germ is not to be found outside the bodies of living creatures, and that it is therefore useless during plague epidemics to disinfect floors and walls in which no living plague germs exist. Endeavor must therefore be directed on the lines of Dr. Hossack's recent paper (*Indian Medical Gazette*, January, 1907, p. 8) to find an efficient destroyer of fleas. Until a satisfactory method of destroying rats and fleas is discovered the sanitarian must trust to one or other of the two remaining methods of dealing with an epidemic, viz., he must either persuade the people of the afflicted place to leave both rats and fleas behind by evacuating the infected houses, or he must persuade the people to be inoculated and so

immunize themselves to a disease which is present around them in epizoötic form.

Two excellent papers are published as appendices to this report, one by Capt. Percival Mackie, I. M. S., and another by Dr. Winter, which show how quickly the microbes of plague disappear when brought into contact with ordinary saprophytic earth germs, and these results have been confirmed by the experiments of the Plague Commission (see *Journal of Hygiene,* Special Plague Number, Sept., p. 518).

The importance of the results of these experiments has not been fully realized; they dispose of the older theories of a "soil poison," and of the older methods of disinfection. Attention must therefore be directed to the temporary evacuation of infected houses and to methods of disinfection which will kill the danger-bearing flea and the infected rat. There also remains inoculation.

There is a very general unanimity among medical men as to the very great value of inoculation. Its value has been seen from the first, and was long ago demonstrated with a wealth of statistics in the report of the Indian Plague Commission, of which Sir T. Fraser and Sir A. E. Wright were prominent members. Of recent years this has been so well recognized that the same care has not been taken to collect, or, if collected, to publish, the results of prophylactic inoculations. Lieut.-Colonel Bannerman, however, recognizes the great educative value of repeatedly published statistics, and in the present report has brought together a remarkable mass of evidence, unanimous as to the much lesser case-incidence and lesser case-mortality in inoculated communities, and unanimous as to the absence of any ill after-effects of inoculation. It also appears that there is a very general opinion among those who have largely used the prophylactic that the protective effect lasts from six to twelve months—that is, over at least one whole plague season.

It is impossible to summarize the reports here collected in favor of inoculation. They run to some eight pages of Colonel Bannerman's report and have been sent in by civil surgeons, medical officers of regiments, superintendents of jails, medical missionaries, and assistant surgeons from all parts of India and Burma.

The saving of life by means of inoculation is strikingly shown by the following figures reported by the Executive Health Officer of Bombay. Of the Health Department Labor Staff 7182 were inoculated; there were only 13 deaths from plague, a percentage of 0.18, whereas in the 418 non-inoculated members of the staff there were no less than 26 deaths from plague, or a percentage of 6.02 (as contrasted with 0.1), or a difference of 97 per cent in favor of the inoculated.

Lieut.-Colonel Bannerman also quotes the very striking results of the protection afforded by inoculation to the prisoners in the jails of the Bombay Presidency. Major J. Jackson, I. M. S., the then officiating inspector-general of prisons, published a notable contribution to the literature of antiplague inoculation. From this contribution it is noted that in 1897, with a daily average population in jail of 8392 prisoners, there were 43 cases (and 27 deaths) from plague, while in 1904 there were only 8 cases and 5 deaths. "As inoculation," writes Major Jackson, "has been more and more resorted to in the prisons, so the incidence of plague and death-rate has diminished. Plague in fact has been banished from Bombay prisons, and as a factor in mortality it has sunk to the level of measles. Even the people in Dharwar are saying: 'The prison is the only place plague does not go to.'"

The authors are not disposed to attribute this wholly to the good effects of inoculation. Plague must needs be constantly introduced into jail segregation wards by new arrivals; that it does not spread or remain is due to the high sanitary condition of the jails.

Major Jackson also shows that no ill effects follow inoculation; in fact in one group of 236 inoculated prisoners and 236 non-inoculated prisoners it was found that the inoculated prisoners so far from being the worse for the inoculations actually put on more weight than the non-protected!

The authors commend this report to the attention of all medical officers and earnestly invite them to do all they can to encourage antiplague inoculation in the communities among which they work. The striking life-saving value of inoculation is known and admitted by all who have studied the question. It is the only ready, tried, and prepared method they have for fighting plague. Let it be used now, and not wait to get rid of plague when the sanitary condition of Indian towns and villages has reached a European level. This they hope may come in time; meantime lives can be saved by antiplague inoculation.

For facts and figures to convince the few remaining skeptics the authors recommend a perusal of Lieut.-Colonel Bannerman's report.—*Indian Medical Gazette*, February, 1907.

WHOOPING-COUGH: ITS TREATMENT BY AN IMPROVED ABDOMINAL BELT.

In the *Archives of Pediatrics* for February, 1907, KILMER says that since writing his first paper some three years ago upon the treatment of pertussis by means of a slightly constricting elastic abdominal belt, there has been ample proof by the many cases recorded to date that by this method about 95 per cent of cases are positively benefited. This is especially true with regard to the cessation of vomiting.

The first belt was composed of a long strip of silk elastic webbing placed over a stockinet band; this, while efficacious, was nevertheless warm to the child and expensive to the parents. The new belt to which the author calls our attention is made of linen, with a strip of silk elastic webbing two inches wide inserted on either side. This is sufficient to give the belt elasticity, yet does not add materially to its weight. The belt laces in the back, and by means of the lacings any degree of constriction may be maintained; it is worn over the undershirt or band. The width should approximately be as follows: For infants, 4 to 5 inches wide; for children, 5 to 8 inches wide.

The length of the belt should be such that when complete it should measure three inches less than the circumference of the abdomen at the navel. The degree of constriction should be determined in each individual case; usually a slight degree of constriction is sufficient to produce a moderation of the cough and a complete cessation of vomiting. If, after having applied the belt, the symptoms do not abate, tighten it slightly.

A sense of comfort is generally expressed by children who are old enough to make themselves understood. These belts can be made by any instrument-maker at a few hours' notice; the usual mode of procuring them in any individual case is to send the measure of the circumference of the child's abdomen (at the navel) to the instrument-maker, also stating the age of the child, and in twenty-four hours' time a belt is ready for application. The belt is best applied by the attending physician, and the parents and nurse should be instructed in its use.

The cost of these belts is nominal, from $1.50 to $3 being charged for their making. In dispensary cases and where the parents cannot afford the belt, the author has used an ordinary muslin binder, and although this is not as elegant as the belt, the results are very satisfactory.

THE PRACTICAL APPLICATION OF THE NEWER KNOWLEDGE OF THE CHEMISTRY OF MILK.

Certain recent work upon the chemistry of milk bids fair to revolutionize to a marked degree our conception of the problem of artificial feeding. Many of the valuable rules and principles which now guide us have been developed through clinical observation and experimentation without any very systematic effort to find reasons for their successful employment. Little assistance in the solution of these problems could be derived from the older treatises upon the chemistry of cow's milk. With the publication, however, by an American investigator, Van Slyke, of his researches into the commercial processes of cheese-making, certain

data became available which were capable of furnishing important deductions applicable to infant feeding and infant digestion.

These data may for present purposes be summed up by saying that the casein in suspension in cow's milk, which, as calcium casein, normally holds in combination a definite amount of calcium, is readily transformed by the rennet ferment in a weakly acid medium into the calcium paracasein or junket clot. By the further addition of acid the clot is changed into acid paracasein curd. No such clotting or curdling by rennet will take place if the milk is made alkaline, but subsequent neutralization of an alkalinized milk by a slight excess of acid will restore its susceptibility to rennet action. A moderate acidity enhances the activity of rennet, but with the absence of rennet sufficient acid to fully satisfy the casein's affinity for acid so changes the casein into acid casein curd that the subsequent addition of rennet produces no alteration in the type of curd.

In short, the power of casein to combine either with alkalies or acids is so definite that it can be utilized to modify or prevent the formation of the large, tough, contractile curds which result to a greater or less degree from the combined action of rennet and acid upon cow's milk when introduced into the human stomach.

We have thus discovered that the addition of alkalies to milk not only forms new chemical compounds with casein, but produces distinct effects upon the processes of digestion. A small amount of the alkali simply delays curdling pending the neutralization of the alkali by the acids present in or secreted by the stomach. This delay alone tends to prevent the curdling of the milk in large, solid masses, and favors the formation of smaller and more flocculent curds. On the other hand, if the alkalinization is sufficient not to be overcome readily, part of the still uncurdled milk will probably escape through the pylorus to be digested in the intestine, and so relieve the stomach of part of its work. If the gastric digestion is weak and faulty, this is often an advantage, and it may even be possible to shift the entire burden of digestion to the intestine.

It is evident that agents capable of such radical influence upon the processes of digestion should not be used without careful discrimination. They may be of extreme value in the feeding of infants unaccustomed to the digestion of cow's milk or for infants with weakened gastric digestion. We may employ them to change the character of the curds or to divide the labor between the stomach and intestine, so as to avoid overtaxing the former organ; but we must keep in mind that the infant's stomach must be developed during infancy, and that it gains strength only when a carefully graded increase of work is demanded of it. Grading the increase of work is indeed the true explanation of the results obtained by the time-honored use of lime-water as a routine measure in modifying milk. By the addition of one ounce of lime-water to every 20 ounces of milk mixture irrespective of the quantity of milk entering into its composition, the casein in the earlier and weaker mixtures is more profoundly affected by the lime-water than in the later ones in which the milk is progressively increased while the quantity of lime-water does not vary. The inhibiting action of the alkali upon coagulation is thus gradually withdrawn as the normal stomach in its development becomes equal to greater tasks.

The various alkalies in common use do not necessarily act in precisely the same way. Lime-water is distinctly alkaline and but weakly antacid. The calcium of lime-water enters up to a certain limit into further direct combination with the casein, and this is probably true of the sodium, magnesium, and potassium of the other alkaline antacids. It is extremely probable that these new combinations vary in their digestibility, and more especially in their solubility. In disturbed conditions of the stomach, accompanied by the formation of abnormal acids, alkaline additions to the milk neutralize these and prevent sudden and disastrous curdling of the milk in large masses, such as may be formed in the presence of rennet by abundant acid. One

of the sources of an undue amount of acid may be the lactic acid salts present in milk which has just begun to sour. In this stage it is more dangerous for infants than a fully soured or clabbered milk, for in the latter stage the lactic acid has removed the calcium from its union with the casein and made lactate of casein, and in this form rennet cannot change the soft acid curds into those which are tough and leathery. Decalcified casein will then not only not form tough curds, which may be difficult or even impossible of digestion, but a further combination of the acid with this decalcified casein makes a soft, friable, and easily digested lactate of casein curd. This is the principle which underlies the use of buttermilk and acidified milk in infant feeding.

A similar decalcification of the casein by the citric acid radical of citrate of soda, the consequent prevention of tough rennet curds, and the easier digestibility of the subsequent combination of the casein with the hydrochloric acid of the gastric secretion explain the present popularity of citrate of soda, which it is claimed enables larger proportions of milk to be given without digestive disturbance. Thus, with some definite understanding of the action of both alkalies and acids upon milk and their effects upon the digestive processes, the way is cleared for their more intelligent use both as routine measures and in the treatment of infants with enfeebled or disturbed digestions.—*Archives of Pediatrics,* February, 1907.

THE TREATMENT OF NEPHRITIS.

WEBSTER in the *American Journal of the Medical Sciences* for February, 1907, reminds us that it is a matter of common knowledge that in acute nephritis water is the substance most difficult to get rid of through the kidneys. How irrational then is the idea of ordering a rigid milk diet and forcing water. The main effect of such treatment will be the overloading of the blood with material that cannot be excreted, thus increasing an already existing edema, and at the same time causing the heart to work harder to force the increased volume of blood, thus increasing the danger of hypertrophy and later dilatation of this organ.

In cases which are less severe, and not accompanied by a high degree of oliguria and edema, milk to which has been added a little calcium carbonate to form the insoluble calcium phosphate may be given in quantities not to exceed, on the average, three pints, and the remaining caloric value necessary to maintain the standards of the system may be made up of fat in the form of cream and cereals. It must be remembered that, in our efforts to protect the kidney from overwork, we must not go so far as to injure other organs, and at the same time the whole organism. Our idea must be to preserve the general nutrition at as high a standard as is compatible with the best working powers of the kidney. We therefore gauge our diet largely by the degree of oliguria and edema, decreasing the former as the latter increases, and *vice versa.* Meat broths should be interdicted to the last inasmuch as these contain practically nothing but uric acid, purin bases, and creatinin, and in consequence can have very little nutritive value and may irritate the kidney attempting to excrete them.

In the later stages of acute nephritis the food may be gradually increased as desired, care being taken to avoid a large excess of proteid. As is often the case, three or four quarts of milk are given daily in the convalescent stage. Such treatment is bad because the fluid, finding its way into the circulation, may overburden a weakened heart; furthermore, the amount of proteid thus introduced is unnecessarily high. It may be said that it is unnecessary to limit the patient to white meats by depriving him of the red meats. No difference is found between them as to their influence on the general metabolism and on the regenerative processes in the kidney.

Exactly the same procedure as outlined above should be followed in cases showing acute exacerbations of the chronic form.

When we consider the chronic types of nephritis we have a different view-point to study. These types are essentially chronic

—that is, they continue for long periods of time. As curing such a case is, at present, out of the question, we should direct our efforts to maintaining the general body activity at as high a plane as is consistent with the condition of the kidney. Sooner or later the chronic forms, particularly the interstitial type, become practically heart cases and should be treated as such. We are therefore justified in allowing the patient more or less latitude in the choice of his diet, remembering certain precautions. The intake of fluid should be limited to some extent. The idea of forcing a milk diet with plenty of water is harmful not only to the kidney, but, what is more important, to the heart. A liberal proteid diet is permissible, and no difference need be made as to white or red meats. Condiments are to be avoided as far as possible. Fresh fruits and vegetables may be ordered as desired, recalling the fact that von Noorden advises against the use of radishes and celery, but permits asparagus. Coffee, tea, alcohol, and tobacco should be used with great moderation.

In regard to dechloruration, it is to be said that the limitation of salt in the diet is unnecessary, since it seems that the theory upon which its deprivation is based is not tenable. Experiments are still necessary to prove that the edema is dependent on the retention of salt, and also to prove that the salt is actually instead of apparently retained. It is true, however, that some cases are benefited by dechloruration, but it seems doubtful that such results are due entirely to the withdrawal of salt.

It must be recalled that each person needs a certain definite amount of energy to maintain himself in healthy equilibrium. With a nephritic the same thing is true within certain limits. As the energy comes from the food it is rational to construct the diet with definite caloric values in view, remembering that it is advisable to restrict the fluids to some extent and to confine the proteid intake within 100 grammes (on a basis of 70 kilogrammes of body weight). If the reasoning of Chittenden and Folin is correct we must reconstruct our ideas of the proteid need of the system to a basis far below that of the old-established formula of Voit (118 grammes of proteid on a basis of 70 kilogrammes of weight). An excess of proteid is the dangerous thing in the dietary of a chronic nephritic.

We must not forget in our dietetic treatment of nephritis that the digestive powers of the patient should be carefully watched. The digestive tract is a prolific source of toxemia, and should, therefore, be carefully regulated. Likewise, the functional power of the liver should be maintained at a high standard to protect the system against accumulation of abnormal products of a deranged hepatic metabolism.

A BRIEF STUDY OF A DIPHTHERIA EPIDEMIC AT THE ADIRONDACK COTTAGE SANITARIUM (FOR INCIPIENT PULMONARY TUBERCULOSIS).

This report is published in the *American Journal of the Medical Sciences* for February, 1907. The authors conclude that:

1. In institutions immunizing doses of antitoxin of 500 units should be given every two weeks for two or three times.

2. Diphtheria may occur in patients two weeks after an immunizing dose of 500 units.

3. It is unnecessary to endeavor to separate individuals with positive cultures from the nose or throat without clinical symptoms from those with negative cultures when immunization is carried out.

4. One negative culture from the throat is sufficient neither for diagnosis nor for raising quarantine.

5. The advisability of taking cultures from the nose except in nasal diphtheria may be questioned.

6. Careful isolation for three or four weeks under a trustworthy nurse should be practiced. After that time the patient with a positive culture should be kept out of the general dining-room or buildings and at a distance of four feet from all non-diphtheric patients.

7. Some untoward symptoms, usually slight, appear in most patients. A rash,

arthralgia, swelling, and general malaise occur most frequently. A slight transitory rise of temperature occurs frequently.

8. In institutions where the outdoor treatment is rigidly enforced the epidemic will probably be cut short.

9. In the presence of a diphtheria epidemic, patients with pulmonary tuberculosis should be treated as regards the diphtheria as otherwise healthy individuals.

10. When the tuberculous contract diphtheria they should be moved out-of-doors as soon as possible.

11. Mild diphtheria seems to exert little or no harmful influence upon the pulmonary lesion in the tuberculous.

12. The antitoxin in small or large doses seems to have little or no effect upon the pulmonary tuberculosis.

13. Immunizing doses may be given to patients with fever.

14. Complications seem to occur after diphtheria no more often, possibly less, in the tuberculous than in the non-tuberculous.

THE USE OF POTASSIUM PERMANGANATE AND FORMALDEHYDE FOR DISINFECTION.

In the course of an excellent article upon the prevention of disease FIELD advises in the *Medical Record* of March 9, 1907, that the following method be employed in the use of formaldehyde for disinfection. This method is very simple, requiring no apparatus except a tin pail of sufficient capacity, best made with flaring top. It is made with a double bottom, with one-quarter inch air space between the layers of tin, and is entirely covered on the outside with asbestos paper. Instead of this apparatus an ordinary milk pail set into a pulp or wooden bucket will answer every purpose.

The room is sealed, and fine needle-shaped crystals of potassium permanganate (3½ ounces to each 1000 cubic feet of air space) are placed in the container. Over this salt is poured 40-per-cent solution of formaldehyde (1 pint for every 1000 cubic feet of air space). The operator should leave the room quickly, as large quantities of gas are at once evolved. The results of laboratory experiments have shown that the gas thus evolved acts more thoroughly on account of its great concentration, and kills very resistant microörganisms, even when concealed under several thicknesses of cloth. The Marine Board of Health recommends 6½ ounces of permanganate and 2 pints of formaldehyde solution for every 1000 cubic feet. Presence of moisture in the air is essential. The disinfection of the room, the woodwork, furniture, and floors with liquid disinfectants (mercury bichloride 1 to 1000) is as important in this mode of disinfection as in any other. The method requires the use of common and relatively cheap chemicals, so that it is estimated that the disinfection of 1000 cubic feet costs about 75 cents. Based on this method, proprietary preparations are on the market under fanciful names, and for which extravagant claims are made, but they are in no way superior to the simple methods, and their use should be avoided because of the uncertainty as to the amount of gas they will evolve.

THE TREATMENT OF INFECTIVE THROAT CONDITIONS.

YOUNG in the London *Practitioner* for March, 1907, says that there are three useful combinations prepared in the form of compressed tablets which the writer occasionally uses, as follows:

1. Sodii bicarb., grs. xij; ac. carbol. pur., grs. ijss; sod. chlorid., grs. ij. Dissolve in a tumblerful of tepid water.

2. Zinci sulph., alum. sulph., ää 3 grs.; pot. permang., grs. ij. Dissolve in one pint of tepid water. (This has the disadvantage of staining linen, etc.)

3. Another useful combination is the following: Sod. bicarb., sod. borate, and sod. chloride, ää 5 grs.; sod. benzoate and sod. salicylate, ää 7.24 grs.; ol. eucalypt., 7.48 mins.; thymol, 7.48 grs.; menthol, 7.96 grs.; ol. gaultheriæ, 7.6 mins. One tablet dissolved in 8 ounces of water.

These preparations may be used in various ways.

Throat Douching or Spraying.—This perhaps gives greater relief than any other method, and spraying is, as a rule, more grateful than douching. Preliminary cleansing is essential to success. For scarlatinal throat, simple tonsillitis, and syphilitic erythema, it will be sufficient to use either of the solutions made from the above-named compressed tablets, perchloride of mercury 1 in 2000, or boracic acid 5 to 10 per cent. Acetozone, about 10 grains per pint, is useful; it is powerfully germicidal and non-irritating.

For septic or follicular tonsillitis, and for diphtheria, the solutions mentioned should be used in fully twice the strength, but care must be taken, in the case of the mercury perchloride solution, that it is only administered by a careful and trained nurse. Ichthyol (from 1 to 2 drachms in 4 ounces of water) is occasionally useful in irrigation; or the following: Ichthyol, grs. 50; sod. chlorid., grs. 25; aq. dest., 6 ounces.

In cases in which rhinorrhea persists in the shape of a thin serous discharge, the author has often found that the addition of a little methylated spirit (about half an ounce per pint) to the lotion used for douching has had a most beneficial effect. Failing this, weak solutions of adrenalin chloride (m. x to xx, per pint of saline solution) may be tried.

THYROID AND SALICIN IN PSORIASIS.

In the course of an article by CROCKER in the *Clinical Journal* of March 6, 1907, he tells us, when speaking of the use of thyroid gland in the cure of this disease, that when it was brought before the profession by Dr. Byrom Bramwell, who was the first to draw attention to it, it was lauded to the skies, and everybody thought a remedy for psoriasis had been found which was going to cure all the cases. But this was found to be wrong. And just as there are contraindications for arsenic and indications for it, so there are indications and contraindications for thyroid extract. It has been thrown aside altogether by a large number of dermatologists and medical men generally, some of whom said it ought never to have been given, and that it must not be given for psoriasis. But, as a matter of fact, its action is sometimes most striking. In the case of one patient thyroid extract acted like a charm, and in three months he was cured of an extensive attack. But the disappointing feature is that in the next attack, which he had in the following year, it failed completely, and that has been one of the reasons why it has fallen into disuse, and almost into disrepute, for the disease.

One can never be quite sure of the cases which will benefit. But if we do get the right case the effect is sometimes more rapid than from any other internal medication. The difficulty is to know which is the right case. We should not give it when the eruption is developing. In the author's experience in trying it on some cases when the eruption was developing, the eruption then came out in a most profuse way. Again, it should not be given in the case of persons who are elderly or who have any weakness of the heart. The author never gives thyroid extract in people over fifty years of age. He has observed most depressing effects produced by it, and the thyroidism can develop to a dangerous extent. Another point is that thyroid extract should be given gradually—that is to say, begin with a single 5-grain dose, and not increase it for a week or ten days; then make it a 10-grain dose; and ultimately, in the course of a month, get up to 15 grains. The author has seldom found it necessary to go beyond that, and it would not be wise unless we had the patient in bed and under observation constantly. But if given to a young and sound person no such harm is likely to accrue. If we have a case which has been uninfluenced by other things there is no harm in trying thyroid; it is more likely to succeed in wide-spread and active cases than where there are only a few chronic patches—in fact, for the very chronic patches internal medication is not worth trying.

The last drug which the author mentions in treatment is what he refers to as his "own little ewe lamb"—salicin. That is

the drug he uses most largely in the treatment of psoriasis, because it is applicable to a wider range of cases, and because it is successful in a large number of the cases of this disease. He does not claim that it cures all cases. He does not claim that it cures all attacks in any one patient, though it does in the majority; neither does he claim that it has any preventive action any more than arsenic has. But he claims that in a large proportion of cases it is useful, and that in a very fair proportion it is extremely successful. In a few it is rapidly successful. The more acute and widespread the case, the more likely salicin and its congeners are likely to be successful. In one case the treatment has been successful in each attack. But where there are chronic, hard patches, salicin seems to have only a moderate effect. The indurated, thickened patches must have local treatment to remove the crusts. Without anticipating any striking improvement in them, there is a certain amount of benefit observable. In order to get good results from salicin it is necessary to give it in fairly full doses. Begin with 15 grains three times a day directly after meals, and increase it up to 20 grains, and even up to a higher dosage. Salicin is soluble up to 19 grains to the ounce; therefore, if it is given in greater strength than that it must be suspended in tragacanth or some similar mucilaginous mixture.

The author gives salicin instead of salicylate of soda because salicin seldom upsets the patient; salicylate of soda very often does. Salicin also can produce a rash of its own—an erythematous eruption of a transitory character; but since the writer has given it so largely—in hundreds of cases—he finds the salicin eruption extremely rare, say not in more than one per cent of the cases. If there is such a rash, it is generally morbilliform, without itching, which disappears within a short period of the cessation of the drug. Salicylate of soda produces a good deal of depression in full doses, and he chiefly gives it when he has reason to believe there is hepatic indolence and stomach troubles, for which salicylate of soda is often useful; and he gives it more for its effect on the gastrointestinal canal and liver than for its effect in psoriasis, although as a by-product it is often beneficial in both. With regard to intramuscular injections of mercury, these are very rarely resorted to and very rarely required. In a few cases which have resisted other treatment altogether the author has used those injections with success, just in the same way as it is used for syphilitic eruptions, although it has nothing to do with syphilis. The preparation he used was the sozoiodolate of mercury, ¼ grain injected into the buttock deeply once a week, exactly as for syphilis.

The local treatment of psoriasis is very important. Here, again, there are certain drugs which have a special vogue—namely, tar and chrysarobin—but they require great care in use. With regard to chrysarobin, it is one of the most efficacious of the local remedies in certain cases, but in irritable cases it often spreads the disease instead of curing it. In one instance in which a very strong preparation of chrysarobin was used on a patch on the back, before the patient was seen by the writer, while it had only little effect on that patch there was a copious crop of small spots developing in the neighborhood for several inches beyond the original patch. Judgment, therefore, is required in adapting the strength of the drug to the condition of the skin. If there were great inflammation the author would treat it, as if it were eczema, with calamine liniment, or glycerin of lead lotion, constantly applied, and that is an excellent way of treating other forms of psoriasis in association with a tar lotion. The liquor picis, which is the old liquor carbonis detergens, should be scrubbed into the skin with a stiff brush, and then the limb should be wrapped up in a glycerin and lead solution, and the whole covered up with oiled silk. In this way the most obstinate patches are rapidly improved. The large patch on the back of this man would get better quicker and more readily with that than by any other treatment, but it necessitates the patient lying up. While it is not a very pleasant treat-

ment if used over a very large surface, it is extremely efficacious, and a large number of cases yield and improve rapidly. After the great bulk of inflammation has been reduced by such means the author very often applies chrysarobin pigment. Chrysarobin may be used in almost all chronic patches and in various strengths, according to the hyperemia—10 to 30 grains to the ounce. Stronger applications than that must be used with care, and must not be trusted to the patient himself. The applications should only be made under observation, so that if there is erythema set up the drug can be stopped and means adopted to subdue such inflammation. It may sometimes be used in more acute inflammations in very small quantities—½ to 5 grains to the ounce of plain oxide of zinc ointment, or sometimes only lard. Some of the more acute cases do extremely well with this.

THE INFLUENCE OF DIGITALIS, STROPHANTHUS, AND ADRENALIN UPON THE VELOCITY OF THE BLOOD CURRENT.

As the result of a research reported in the *American Journal of Physiology* for February, 1907, EDMUNDS concludes that the members of the digitalis series produce an acceleration of the blood stream followed by a retardation, which appears under larger doses of the drug. In the greater circulation the peripheral stream is accelerated, while in the portal area there may be a similar effect if these vessels are not strongly contracted. If there is a very great contraction here, as shown by a marked rise in blood-pressure, the portal stream is probably retarded, although a certain amount of resistance may be overcome by the increased efficiency of the heart. In some animals the only demonstrable effect of adrenalin on the current is great slowing, probably due to the greatly increased blood-pressure.

The acceleration of the blood stream which is produced by many of the series during the early stage of their action may possibly explain some of the benefits derived from their administration. The fact that the blood is flowing more rapidly through the tissues would indicate an improved blood supply, giving not only more nourishment, but also providing for more complete removal of waste products. This does not overlook the benefits derived from the characteristic action of the series upon the cardiac muscle itself.

THE USE OF ADRENALIN DURING ETHER ANESTHESIA.

VENABLE tells us in the *Virginia Medical Monthly* of February 22, 1907, that some time ago in giving ether to a young man who was to undergo an operation for oblique inguinal hernia, he experienced more trouble from a profuse bronchorrhea than ever before. At the commencement of the anesthetic the patient's respirations were clear and regular, his color was good, and his pulse 84. The anesthesia was, as usual, begun with nitrous oxide gas, followed by ether, using a Bennett's inhaler until etherized, when a towel cone was substituted. Very shortly after the ether was begun the bronchial secretions were markedly stimulated, and so rapidly increased that in ten minutes there was a profuse bronchorrhea. The pulse increased in rapidity and lost volume, respirations became shallow and irregular, and the patient cyanotic. The moment the ether was withheld the patient promptly offered resistance, and when more was administered his breathing was so interfered with by the great flow of mucus that at times respirations ceased.

After trying all the usual methods to continue the anesthetic under these trying circumstances, the author ordered a 5-percent solution of adrenalin, and with this mopped out his pharynx. Almost immediately the secretion of mucus became less, the respirations clearer and deeper, and the patient less cyanotic. In a few minutes, however, there was a threatened return of the profuse secretions with the accompanying cyanosis, but by the use of the adrenalin this was again averted. In twelve minutes from the time the adrenalin was first used the throat was clear of mucus, respira-

tions were deep and regular, and all embarrassing symptoms had disappeared. After this a few drops of the adrenalin solution were occasionally poured into the ether cone, and the anesthesia was carried on to an uneventful termination. With the improvement in respirations the pulse steadily improved, becoming regular and full. The recovery from the anesthesia was quick and satisfactory. The patient vomited once, but complained of no subsequent nausea.

With this encouragement the author determined to use adrenalin with his anesthesia as a routine in a series of cases. This he did, and arrived at the following facts:

He found that a 25-per-cent aqueous solution of the standard 1 in 1000 gave the best results, and that by first pouring ether in the towel cone and spraying the adrenalin solution on it, depending on the ether to vaporize it sufficiently for inhalation, was the best mode of administration. Three- to six-minute intervals are sufficient for its use, and a total of from one-half to one ounce of this solution is enough for an operation lasting from thirty minutes to an hour. The effects are a more uniform etherization, the pulse becoming steadier, slower, and of better character more rapidly than under ether alone; respirations are quiet and regular, the bronchial secretions are practically checked, and the progress is not interrupted.

These cases were not selected, and among them were old alcoholics; two women over sixty, one of them nearly eighty years of age. Three were very long, tedious operations, lasting over two hours, and in none of the series was any stimulation required during the anesthesia.

Recovery from the anesthetic was uniformly good; there was practically no postoperative shock, and no stimulation was needed in any one of the cases; only two patients vomited at all, and very little nausea was complained of.

From the foregoing facts the author concludes that owing to the contraction of the smaller vessels the bronchial glands secrete less mucus, and there is better aeration in the bronchioles and pulmonary vesicles, less ether is required to produce anesthesia, and there is less probability of ether pneumonia following. The adrenalin, acting generally from absorption, is a powerful stimulant; it materially lessens shock, lessens the capillary ooze at the field of operation, and is of great benefit to the much weakened patient.

INJECTION OF MAGNESIUM SALTS IN TETANUS.

MELTZER and AUER in the *Journal of Experimental Medicine* of December 21, 1906, in writing of this plan assert that the three cases reported by them show that in human beings the intraspinal injection of magnesium sulphate is capable of abolishing completely for quite long periods the severest symptoms of tetanus. In one case it was apparently the means of saving the patient's life. That the other two patients died while their muscles were in a perfectly relaxed condition may be taken to indicate that tetanus toxin has other poisonous effects besides those which produce the tetanic symptoms. Since, however, other interpretations are possible, they cannot enter here into a discussion of this subject.

They believe that intraspinal injections of magnesium sulphate, in doses which do not affect the respiratory center or other vital function, are capable of abolishing completely all clonic convulsions and tonic contractions in cases of human tetanus, and experimental tetanus in monkeys. The relaxing effects of the injections may last twenty-four hours or longer.

In experimental tetanus in monkeys early intraspinal injections of magnesium salts are capable of retarding the progress and development of the tetanic symptoms.

THE CARE AND TREATMENT OF INEBRIATES.

In the *Journal of the American Medical Association* of February 23, 1907, BUTLER writes upon the management of inebriety. This is treatment of a protracted disorder like typhoid, where any "specific" becomes an absurdity, since the patient, and not the

disease, requires treatment. Strychnine is beneficial in nearly all nerve defects, because it enhances general circulation, gives tone to the heart, and adds a certain buoyancy which offsets depression. For this reason strychnine and nux vomica have often been credited with curing inebriety. The author prefers strychnine nitrate 1/100 to 1/50 grain three times a day, either in solution or in pill. Other preparations useful occasionally are the hydrobromate of strychnine 1/50 grain, and arsenate of strychnine 1/100 grain, once or twice daily. Other good tonics for chronic alcoholism are the following:

℞ Tr. nucis vomicæ, f℥ss;
Acidi phosphorici dil., ℥j;
Aquæ chloroformi, ℥j;
Aquæ dest., q. s. ad ℥vj.
M. Sig.: A sixth part three times daily.

℞ Tr. nucis vomicæ, ℥iv;
Acidi nitrici diluti, ℥v;
Fluidextracti leptandræ,
Fluidextracti taraxaci, ää f℥vj;
Infusi quassiæ, q. s. ad ℥viij.
M. Sig.: Two teaspoonfuls in half a glass of water two or three times a day.

Mandragora is an old remedy for conditions of depression, and as it undoubtedly adds a certain nerve-toning element to a decided eliminative tendency, there is no doubt that at times it would prove beneficial in certain cases of inebriety. Its nerve-toning and resultant sedative process, as well as its eliminative action, however, are greatly overestimated. It has an action on the heart resembling that of digitalis, but has not quite the tonic effect on the arteries of strophanthus, with which it has been allied. It was a great favorite with the Greek and Roman alienists, and their claims for it have been revived in St. Louis, the home of proprietary preparations. Like all the nervous exhaustion states, inebriety is accompanied by motor disturbance. The inebriate requires restful sleep. Combinations of sulphonal, of trional, of veronal, and tetronal with old vegetable narcotics, like passiflora incarnata, hyoscyamus, conium, etc., are frequently beneficial for this purpose. The following is an excellent formula to produce sleep in these cases:

℞ Sulphonal, gr. xviij;
Fluidextract conii, m. xviij.
Pulv. glycyrrhizæ, q. s.
Ft. caps. No. vi. Sig.: Take two at 6 P.M, two at 8 P.M., and two at 10 P.M. The next night half this quantity will probably suffice.

Lupulin in 10- or 20-grain doses taken at bedtime will often serve as an efficient hypnotic.

Balneotherapy, on account of the stimulus of the circulation, is peculiarly beneficial in all its varieties. Cold sponging, giving in such a way as to reach the spinal and pelvic nerves, exercises a beneficial influence in many directions. In diet, red meats must be greatly reduced as well as the starches, while the fats should be increased. Food, as a rule, should be given frequently in small quantities, but should be very nutritious. Fresh acid fruits are of great value.

In regard to moral treatment the inebriate must place himself under medical control for a prolonged period; otherwise results will not be permanent. Separation from the family and from the previous environment in which the condition has developed is absolutely necessary in the vast majority of cases.

THE PROPHYLAXIS OF SCARLATINAL NEPHRITIS.

In an article bearing this title in the *Edinburgh Medical Journal* for February, 1907, THOMPSON reaches the following conclusions:

1. Scarlatinal nephritis is a distinct part of the disease, and should not be looked upon as an inevitable sequela, which presents itself in a certain percentage of cases; and as such it should be open to treatment.

2. The cause of scarlatina is an organism, but of what particular variety sufficient evidence has not been given to determine it.

3. The only form of treatment that is likely to be of any real value in counteracting the nephritis is the prophylactic, the object being either to kill outright, or to weaken the virus by a substance which is in itself harmless; and as the virus is in the general circulation at the beginning of the

disease, it must perforce be present in the kidneys and urinary system.

4. The diet and general medical supervision of the patient should be strict. A milk and farinaceous diet should be insisted upon for the first three weeks, during which time patients should be kept in bed; they should be in the house for the two weeks following, and care should be taken until **desquamation** is completed. Patients should be encouraged to take plenty of diluents as long as there is no evidence of fluid collecting pathologically in any part of the body.

5. All methods of excretion should be encouraged and helped in every way possible. Thus the fauces should be frequently swabbed gently and gargled with sodium bicarbonate solution to remove mucus, and this should be followed by a weak antiseptic solution—*e.g.*, chlorine water. A Higginson syringe should be used when gargling is not feasible, but care should be taken that it is not done too forcibly, to cause the extremely infectious tonsillary exudate to be driven up the Eustachian tubes, as the child splutters and swallows. Desquamation should be encouraged by frequent sponging and occasional tepid baths, to prevent a clogging of the exits of the sebaceous glands with partially shed epithelium. Constipation should, of course, be avoided, but purging lowers arterial tension and should be guarded against; for a low arterial tension is detrimental to diuresis, which should be encouraged. Rather above than below the normal amount of urine should be the guide. A frequent examination of the urine should be carried out.

6. With regard to the use of a prophylactic drug against the nephritis of scarlatina, the only one that has proved itself to be of any value is urotropin. It is true that urotropin had the distinct advantage of being used in cases in August and the first eighteen days of September, which is a time that the nephritis percentage is usually low. But the fact that of the forty-seven consecutive cases treated with urotropin not one had nephritis, and only one had albuminuria, is, in the author's opinion, encouraging enough to suggest the further use of the drug in scarlatina.

7. And therefore, finally, he suggests that all cases of scarlatina should be treated from the beginning with 5-grain doses of urotropin thrice daily for children up to twelve years, and for patients above that age 7½ grains thrice daily. In the administration of the drug, the importance of dilution with water must not be overlooked; and the author recommends that this treatment should be continued to the end of the twenty-eighth day of the disease.

AN EXPERIMENTAL RESEARCH INTO THE RESUSCITATION OF DOGS KILLED BY ANESTHETICS AND ASPHYXIA.

CRILE and DOLLEY in the *Journal of Experimental Medicine* of December 21, 1907, make a report on this subject. In regard to the solution employed for infusion, their observations as well as other researches within the past year have led them to conclude that Ringer's solution yields more favorable results than saline solution. The most satisfactory results were obtained with the infusion bottle at a height of five or six feet.

On the data supplied by these researches and those of preceding researches on similar lines they arrive at the following conclusions:

1. Animals after death from chloroform, ether, or asphyxia up to five minutes were uniformly and readily resuscitated; up to ten minutes there was an occasional failure; beyond ten minutes consciousness was rarely restored, and the proportion of successes in the resuscitation of the circulation and the respiration diminished with the lapse of time; after twenty-three minutes in adult dogs and thirty-five minutes in puppies complete return of the circulation was not accomplished.

2. After death from chloroform and ether animals were more readily resuscitated than after death from asphyxia.

3. Resuscitation, if successful, occurred within one minute after the administration

of adrenalin in the majority of instances; it rarely occurred after an interval greater than three minutes.

4. The greatest difficulty to be overcome was clotting. The probability of clotting increased in direct ratio with the lapse of time after death. Cardiac trauma predisposed to clotting.

5. The younger the animal, up to certain limits, the more readily it was resuscitated.

6. Any artery may be used for the infusion, though the advantage is probably slightly in favor of the carotid. The infusion should be directed toward the heart.

7. The probable success of resuscitation is greater in inverse relation to the lapse of time after death; a rapid rise in the arterial pressure is attained by arterial infusion with a therapeutic dose of adrenalin, together with good artificial respiration and the avoidance of unnecessary cardiac trauma by massage. All artificial aids should cease as soon as the functions are competent.

REPORT ON THE TRYPSIN TREATMENT OF CANCER.

In the *Boston Medical and Surgical Journal* of January 3, 1907, GRAVES gives a valuable report on this topic. He concludes that a discrete cancerous node systematically attacked by injections of trypsin shrinks and becomes hard and fibrous or disappears.

Second, neighboring nodes are little if at all affected, and are probably influenced only when the trypsin comes into actual contact with the growing cells.

Third, the treatment of a given node causing it to shrink or disappear does not prevent the appearance later of another node in immediate proximity to it.

Fourth, there is no evidence in these cases to show that trypsin affects cancer cells by circulating in the blood, or that it affects them in any way excepting by direct contact.

Fifth, the internal administration of the various ferments of the pancreas is of benefit to cachectic patients; but from the author's experience there is nothing to show that this benefit is due to anything else than the assistance given to the intestinal digestive secretions of the individual patient.

Sixth, the direct action of trypsin on growing cancer cells, as shown clinically and microscopically, is sufficient warrant to continue the treatment in inoperable cases, especially in view of the fact that there are apparently no serious results that can occur from its use.

THE DECHLORIDATION TREATMENT IN CARDIAC AND RENAL DISEASE, OBESITY, ETC.

GUBB in the *Clinical Journal* of January 2, 1907, in speaking of this plan of therapy says that the dechloridation treatment comprises two principal indications: one is to rid the organism of the surplus chloride and water; the other is to so apportion the ingestion of chloride as to maintain the intake at a slightly lower standard than the output.

It is easy enough to calculate the intake; milk contains 1.60 gramme per liter, bread 8 to 15 grammes per kilo., and meat about 1 gramme per kilo. (Chloride-free bread may contain as little as 1 gramme to the kilo.) A mixed chloride-free diet represents approximately 1.5 gramme of salt per day.

A patient under the dechloridated diet is regularly weighed, and when the weight has become stationary, showing that the process of dechloridation is complete, we may cautiously add salt to the diet, in order to ascertain the limit of permeability of the kidney. As soon as we exceed that limit there will be a gain of weight consequent upon retention and hydration. The suitability or otherwise of the diet, therefore, does not depend upon its nature, but upon its richness in salt, a fact that cannot be too strongly insisted upon.

The advantage of the chloride-free diet is that we can compile a dietary in accordance with the taste of the patient. He may take, says Widal, saltless bread; meat, either raw, grilled, or roasted; fresh-water fish, eggs, butter, and cream, along with

any kind of vegetable (especially potatoes); rice, salads, etc.; sweetmeats, pastry, fruits, jam, chocolate, etc. The absence of salt may be masked by using other condiments. As Widal points out, the treatment naturally will not obviate all the accidents to which renal and cardiac patients are liable at advanced stages of disease, but it may at any rate enable us to conjure certain complications which would otherwise kill the patient, and we can devise a regimen more in accordance with his habits.

Labbé and Furet investigated the "chloride balance" in obesity, and found that in most cases there was decided retention, in one case to the amount of 102 grammes, in another 47.5 grammes. They remarked that some time elapsed before the tissues became hydrated in proportion to their richness in salt, and the same disjunction was noticed in the course of chloride elimination. These observations have an important bearing on the treatment of obesity. For instance, the deprivation of fluid, which forms part of most antiobesity regimens, tends to increase the proportion of chlorides in tissues, and when this has attained a certain pitch the organism reacts and seeks to retain as much fluid as possible, whence a marked reduction in the amount of urinary secretion. The best results will be obtained by a comparatively chloride-free diet, associated with the necessary restrictions in the matter of food in general.

As it is necessary to make repeated analysis of the urine, in order to determine its richness in chloride of sodium, it may be well to describe a summary method introduced by Ekehorn, of Berlin, which is sufficiently accurate for the purpose. He makes use of a test-tube 22 centimeters long and 15 millimeters in diameter. This is marked as follows: The first mark from the bottom, "U," indicates a capacity of 2 Cc.; the next, marked "I," indicates 1 Cc. more, the rest of the tube being graduated in cubic centimeters; the third mark from the bottom being marked "O," and the rest 1, 2, 3, etc.

The test solutions are the following:

1. Sulphocyanide of potassium, 0.332 gramme; distilled water, 40 grammes; concentrated solution of iron alum, free from chlorine and ferric sulphate, q. s. to make 100 Cc.

2. Nitrate of silver, 5.815 grammes; nitric acid, free from chlorine, 50 Cc.; distilled water, q. s. to make 1000 Cc.

Each cubic centimeter of the nitrate solution corresponds to 1 per 1000 of NaCl in the urine, and can be read off on the tube.

Pour in 2 Cc. of urine (to mark "U"), then 1 Cc. of the No. 1 solution (to mark "I"), then add the silver nitrate solution drop by drop until the precipitate is completely decolorized—*i.e.*, has a gray tint—and the liquid has lost the color of the sulphocyanide. Then read off the result. Albuminous urine must be first boiled. The limit of error with this procedure is .25 per thousand.

THE HYOSCINE SLEEP IN OBSTETRIC PRACTICE.

BIRCHMORE, in the *Medical Record* of January 12, 1907, tells us that since the rediscovery of the conditions under which the deep sleep, resembling death in its soundness, of which the tradition had come down through the ages, could be produced, men in various parts of the world have made use of it to obtain insensibility to pain. A few have made use of it in the practice of the obstetric art, and some have furnished the writer notes more or less complete of their experiences. From their notes he has gathered certain facts which he has used to form the material for this thesis, which may be considered, he believes, as a statement of the conditions in fact and in practice, on which that great improvement in the obstetric art for which we have long been looking may reasonably be grounded.

The actual results which have been attained may be summarily stated in very few words: The patient slept, labor came on and progressed in accord with usual conditions, normally in relation to the details. The labor was not prolonged, far other-

wise; and in no case was it needful to use an anesthetic, although the forceps was used twice. The only case in which the mother showed any signs of awakening was not one demanding interference. No results influencing the infant unfavorably were observed, although most anxiously looked for. Such is a summary of the results, but that this summary may be duly appreciated it is well to consider the whole proposition, theorem, and demonstration in detail. The hyoscine was administered hypodermically in doses of 1/100 grain, in combination with morphine, ¼ grain. This amount was given in solution in 1 Cc. of water, and repeated as required. Much stress is laid upon the absolute purity of the ingredients for reasons which are obvious, but it is of special moment when so small a dose as that of hyoscine is used that the nearest possible to absolute purity should be attained.

As a rule the remedy was given hypodermically, but in one instance the first dose was given per os, and, except for a delay in taking effect, no change from the normal was seen. The first dose was given as soon as the first stage of labor was certainly begun, and was in most cases sufficient to hold the patient until the so-called expulsive pains were distinctly pronounced. The instant the patient began to show the least evidence of perception the second dose was given. In the cases requiring the aid of the forceps a third dose was given in two instances, but not in the third case, and probably the second forceps case did not really need the third injection.

The effect upon the patient does not show the variation which might in some sense have been expected, so far as the depth of the sleep and the length of it is concerned, nor did the doses have the cumulative effect which might have been expected. On the question of the length of the nap one group of cases suggests six hours as the normal duration, while another group gives eight hours from the time the second dose was given. But in the case in which there was an eight-hours' sleep, the time between the two doses was less than in those in which the sleep was for six hours. The exact relation between the doses and the length of the nap is still very indeterminate.

LUXATION OF THE ULNAR NERVE.

Two forms of luxation are recognized by ROSENBACH (*Deutsche Zeitschrift für Chirurgie,* Band lxxxv), complete and incomplete. In the former the nerve slips entirely over the inner condyle and comes to lie in front of this; in the other it merely rides outward on it.

These displacements cause no annoyance unless the ulnar nerve is inflamed, in which case recovery is interfered with. The absence of symptoms is shown by its frequency, about ten per cent of all persons showing incomplete and over one per cent complete dislocation. The condition is due to looseness of the fibrous tissue behind the elbow, to small size of the epicondyle, abnormally great angle between the arm and forearm, and large size of the triceps tendon, which tends to push the nerve out of place. The displacement only occurs when the arm is flexed, the nerve returning to its position on extension. It may be replaced without difficulty, or may be fixed in its abnormal position as long as the arm is flexed. Treatment consists in exposing the nerve and sewing the soft parts over it so as to hold it in position. In a case reported by Rosenbach, he also cut the groove behind the condyle somewhat deeper.

SILVERIZED CATGUT.

BLAKE (*Annals of Surgery,* January, 1907) strongly commends the method of preparing catgut below described in that it renders this substance not only sterile but slightly antiseptic, and without adding to its irritating qualities or lessening its tensile strength. Four coils of catgut, each containing ten strands, are wound on four glass slabs and placed in a jar containing two-per-cent solution of collargolum, in which they remain for a week, the jars being shaken once or twice in the interval. The slabs are removed, washed in sterile water

until the excess of collargolum solution is removed, and placed in 95-per-cent alcohol for fifteen to thirty minutes. After this the separate strands are wound on separate spools, under aseptic precautions, and preserved in 95-per-cent alcohol until used. Four coils are employed as a unit, as they exactly fill the jar containing the collargolum solution; and as many jars are prepared at any one time as may be necessary.

Pilcher states that he has used Blake's method in more than 500 operations and is abundantly satisfied with it. Moreover, he says that during this period there has been a notable absence of infective accidents such as occur in an active general service.

PROSTATECTOMY.

WATSON (*Boston Medical and Surgical Journal,* Feb. 14, 1907) exhibited at the Boston City Hospital two cases on which he had performed prostatectomy by the perineal method. He states that he has been connected with the operative treatment of the prostate longer than any one in this country, and was the sole and only surgeon for a good many years to be found who advocated prostatectomy, and especially perineal prostatectomy, and he has seen the recent development of the various techniques of the latter procedure, each and every one, and has practiced some of the more important and promising of them, as well as the one he employed long before any of them were put in the field. He therefore speaks with some authority when he states that it does not make the least difference which of them is employed so far as safety or danger of the operation is concerned. Whichever one is preferred by any individual surgeon, and whichever one of them he is most skilled in performing, that is the one he had best adhere to.

Those operations which afford the best chance of avoiding injury to the ejaculatory ducts and the floor of the urethra are to be preferred to those which do not aim at doing this. It has yet to be shown that any serious harm or inconvenience comes from tearing through the sides of the prostatic urethra, which he does in every case of perineal prostatectomy in which he follows the operation he has done for the last eighteen years.

This operation be believes to be the most rapid of all methods. He has removed the prostate in two minutes and without any more risk to the patient than if he had occupied half an hour. The time taken averages about six to eight minutes, and is often as short as four minutes. It consists in enucleating the prostate lobe by lobe or in one mass, as may be preferred, with the finger-tip, aided when necessary by snipping especially tough fibrous connections between the surface of the gland and the inner surface of the outer sheath with blunt scissors.

The finger is passed into an ordinary external perineal urethrotomy incision and into the prostatic urethra. When there, one side and later the opposite side of the prostatic urethra is scratched through with the finger-nail or incised with a gum lance passed beside the finger, in either case above the urethral floor, and consequently above the entrance of the ejaculatory ducts and above their course through the posterior part of the prostate itself. Through these openings in the sides of the prostatic urethra the finger-tip bores until it rests upon the surface of the thin capsula vera covering the gland and forming a part of it. The enucleation is then accomplished by working the finger between this membrane and the outer sheath of the prostate. It is essential that this outer sheath should not be wounded, for in it lie the prostatic plexus of veins which are the source of all the bleeding which occurs in the course of this operation or of any other way of removing the prostate. Hemorrhage need never occur if care is taken to avoid injuring this structure. Personally Watson has never had a hemorrhage of the least consequence in any of these operations, of which he has up to the present time done 74, 54 of them being perineal prostatectomies. Perineal operations have been criticized because of what is asserted to

be the greater danger of wounding the rectum when performing them than in the suprapubic method. As a matter of fact the rectum need never be wounded if only the operator will take the precaution to place two fingers, of the hand not engaged in the enucleation, in it and press upward against the posterior surface of the prostate whenever the enucleating finger presses downward toward the rectum.

In regard to the advantages and disadvantages of the perineal and suprapubic operations there can be practically very little to choose between them, were it not for the one persistent fact that at the very best showing the high operation has an operative mortality of 7.6 per cent and an average one of 11.6 per cent, while the best of the series of the perineal operations is but 2 to 4 per cent and an average of 6.5 per cent. The operative mortality of both operations is gradually diminishing.

HABITUAL DISLOCATION OF THE SHOULDER—TREATMENT.

Habitual dislocation of the shoulder is ordinarily the sequel of an original dislocation by force, and PERTHES (*Deutsche Zeitschrift für Chirurgie,* Band lxxxv) believes that it is generally due to fracture of the articular portion of the humerus or scapula, which has not united properly.

In most cases the condition results from loss of the support afforded the capsule by the tendons of the supra- and infraspinatus muscles and the subscapularis. The insertion of their tendons in the greater tuberosity renders this very liable to fracture by muscular action or by trauma when the shoulder is dislocated. In some cases the tendons themselves give way near their insertion. The ruptured tendon is likely to unite with the capsule of the joint. In other cases the original injury has resulted in tearing off a piece of cartilage from the edge of the glenoid cavity, this piece being often found as a loose body in the joint. The articular surface may be broken almost in half. In still a few cases no bone lesion could be found, and the condition was apparently the result of relaxation or rupture of the capsule. *X*-ray examination will often show the nature of the lesion, and several pictures should be taken from several directions and with the arm in external and internal rotation. The fragment of the tuberosity is usually easily found, and may be as much as an inch away from its original position. It varies in size from a tiny fragment to the entire tuberosity. The tuberosity shows best by exposure from behind with the arm rotated outward. Comparison with the sound side will then show an irregularity in the contour of the upper end of the humerus and an apparent loss of height as compared to breadth. Irregularity of the glenoid cavity can also be recognized, but free bodies are not always seen. On this account no operation should be performed without opening the capsule. The capsule is normally so large that it will hold two heads of the humerus or permit subcoracoid dislocation. It may be found enlarged throughout or with an enlargement of the anterior portion resembling a hernia.

The treatment of habitual luxation formerly consisted in excision of the head of the humerus, and although this often prevented recurrence it frequently left a stiff joint. Suture of the enlarged capsule with reduction in the size is more logical, but does not guard from recurrence on slight trauma. If the tuberosity is fractured or the tendons torn off from it, the injury must be repaired, or the joint will not be secure. The best method of joining the ruptured tendons to the bone is by means of double-pointed steel tacks. These are either driven through the tendons into the bone, or are first driven into the bone and the tendon then sutured to them with strong sublimate silk. The glenoid ligament may be fastened in place in the same way, the double tacks being driven into the neck of the scapula.

To determine accurately and treat properly these conditions, it is essential that the joint be thoroughly exposed. A skin-muscle flap, including the entire deltoid muscle, is drawn backward and upward.

This exposes the joint very well, and the muscle does not suffer from the disinsertion, if sewed in place firmly. The joint may be reached from in front by an incision along the border of the deltoid muscle, the anterior portion of which is severed near the clavicle. The tendon of the pectoralis major is cut, and this muscle is drawn toward the breast. Then with a Gigli saw the end of the coracoid process is removed and the coracobrachialis and short head of the biceps drawn down. The upper border of the subscapularis may be drawn back or severed. After suturing the tendons of the scapular muscles and repairing the glenoid ring, the capsule is drawn up with sublimate silk which is so placed as to strengthen it. The muscles cut during the operation are then restored and the skin closed.

FRACTURE DISLOCATION OF THE SPINE.

LLOYD (*Medical Record,* March 23, 1907) calls attention to the fact that concussion of the spine may cause a certain amount of anesthesia and paralysis, and that immediate operation in such cases is unwise. It is impossible in the first few hours to determine with any degree of certainty how severe the injury really is; even though the cord be injured absolute localization is not practicable. Therefore the surgeon should wait until this period of shock has passed, and until it is evident that there will be no spontaneous recovery complete enough to render life bearable. If, after this period is passed, the patient continues to improve no operative interference should be considered, but as soon as symptoms begin to show retrograde phenomena or seem to have reached the end of improvement, operation should be undertaken.

Of 27 fracture dislocations of the cervical region operated on immediately it is noted that 21 died and but two improved. Of 10 operated on at a later period only two died.

In order to make the operation perfectly successful it is essential to remove enough laminæ to make sure that there is no compression of the cord, to chisel off any projecting bone, to remove all blood clots, and even though laminæ of sound vertebræ have to be removed, to go beyond the hemorrhagic area and to look out for thickening or pressure resulting from inflammatory processes or injuries of the structures within the vertebral canal. Care should be taken that the cord dilates to its full extent, and that the pulsation returns. This can happen only when the cord has not been completely destroyed. The intradural hemorrhage calls for removal of the clot, since there is a possibility of regeneration, providing compression is removed at a sufficiently early period.

Lloyd holds that the dangers of operation are very slight compared to the possible benefit, and the typical symptoms of a complete transverse lesion are not infallible. Hence the surgeon is not doing all in his power to relieve the patient's condition unless he operates. As a rule operation can be delayed a few hours until the concussion effects have passed away. He states that none of the cases that have been reported up to the present time as instances of regeneration of the spinal cord have demonstrated the slightest sign of actual regeneration. Although all of them have been reported as complete transverse lesions, in none of them has this been proven, and it is more than likely that there have been nerve fibers that were not destroyed and that have recovered their function. His own experience relates to two cases in which there was apparent complete transverse section of the cord, and in both the whole of the pulpy mass was removed, and a suture applied bringing the severed ends of the cord in apposition. Neither showed the faintest sign of regeneration.

The author suggests that until we have a sufficient number of cases from which to draw conclusions all of the fracture dislocations of the vertebræ should be submitted to the surgeon for operation. He advocates the plan of approximating the cord as suggested by Haynes (*New York Medical Journal,* Sept. 22, 1906), but warns operators against making a complete section of the apparently destroyed areas, for fear

of cutting out nerve fibers that are not involved in the destructive process and that may resume their normal functions. The author states he has performed laminectomy thirty-two times, and although some of his cases have improved to a marked degree, a very considerable number have shown absolutely no benefit from the operation. In none can he attribute improvement to regeneration.

Haynes gives the following technique for laminectomy: The incision should be in the median line, 4 to 6 inches long, exposing the spinous processes and laminæ for at least five vertebræ, the center one being the seat of injury. With rongeur forceps the spinous processes are bitten off at their bases. The spinal canal is opened first in the middle line and then laterally, removing the laminæ and intervening ligaments. Time spent in plastic work is wasted. If the cord is severed it should be sutured. The wound is closed after primary union over a drain of several strips of rubber tissue or strands of silkworm-gut, and a plaster cast is applied. Drainage should be removed in twenty-four to forty-eight hours. Paralytic symptoms are thereafter treated by massage, electricity, or passive motion continued for an indefinite period. After three or four weeks of treatment in bed a new plaster jacket should be applied with a Sayre's extension tripod or after the horizontal hammock plan. This should be worn and changed as often as necessary for several months. Such a support should be worn for at least a year after a laminectomy for a fracture dislocation.

THE TREATMENT OF GUNSHOT WOUNDS.

On the basis of experience gained in the Greco-Turkish war, FESSLER (*Deutsche Zeitschrift für Chirurgie,* Band lxxxv) gives his approval to the idea of not interfering with such wounds unless there is good reason.

In case the bullet remaining in the tissues does not press upon an important organ or nerve it should not be removed. No probing should be attempted in a desire to locate the foreign body. If it is necessary to open the wound deeply on account of bone necrosis or deep abscess, the bullet should be removed if it is easily found, but no operation should be performed for the removal of a missile which is causing no trouble simply because it can be located easily. The principle of non-interference is of especial value in regard to wounds in or about the joints. Such cases should be put at once in a non-fenestrated plaster cast. In no case should a fresh wound or one which is not already infected be washed. A dry antiseptic dressing, iodoform or sublimate gauze, should be applied and the wound closed tight. Shot wounds are ordinarily sterile until germs are introduced by probing or douching. Moist dressings are to be avoided, as they interfere with the formation of a firm clot, the wounds which heal under a clot doing best. Even penetrating wounds of the chest and abdomen are best treated expectantly until some indication for operation arises. Several cases are reported in which a ball was passed by the rectum after a penetrating wound of the abdomen had healed without a sign of peritoneal infection.

CHRONIC ULCER OF THE STOMACH NOT CURED BY GASTROENTEROSTOMY.

WITHINGTON (*Boston Medical and Surgical Journal,* Feb. 14, 1907) reports the case of a woman forty years old, who had occasionally vomited blood at varying intervals for six years, and had suffered from considerable pain and, intermittently, dark-colored stools. Three years before her operation she vomited about a pint of bright-red blood. She was fed by enema for ten days, then by the mouth, and apparently recovered and remained well for twenty months. Thereafter there was further vomiting of blood, and five months later pain, which lasted for three months, but without hematemesis. The surgeon did at one sitting gastroenterostomy and enteroenterostomy, a plication, and an appendectomy. Two scars were seen on

the surface of the stomach, the pylorus was indurated, and the stomach dilated.

Eight weeks later the patient returned with pain, vomiting, and some bleeding. A second operation was performed, during which some adhesions were broken up and the omentum was sutured to the site of the plication. The gastroenterostomy was found to be still patent.

The patient was discharged in five weeks, and enjoyed an exemption from trouble for eleven months. She then began to pass blood from the bowels and occasionally to vomit it. After six weeks of this she was treated in the usual way for four weeks, and was discharged free of symptoms. Three weeks later she was back again with vomiting of food and occasional slight hemorrhage from the bowels. At the time of the report she was doing well under medical treatment.

This case is of some importance, illustrating the fact, well known to the operative surgeon, that gastroenterostomy, even when performed by the Roux method, is not an absolutely certain and permanent cure for gastric ulcer.

URTICARIA—EXPERIMENTAL STUDY OF SOME CASES.

PARAMORE's experiments in urticaria receive an added interest when compared with Morichau-Beauchant's investigations as to the origin of the acute circumscribed edemas. The latter worked on the theory that the primary cause of the edemas was defective digestion, whereby substances were created which, circulating in the blood, acted as lymphagogues and caused an active endothelial secretion of serum without necessarily any accompanying vasomotor disturbance. Paramore followed Wright's suggestion, made in 1896, that urticaria was a disease of the nature of a serous hemorrhage, associated with which was a defective coagulability of the blood, due to a diminution of the calcium salts. Wright's method, published in 1905, was used to determine the relation existing between the calcium salts and the coagulability. The calcium content is measured by drawing into a pipette 5 cubic centimeters of fresh blood and 5 cubic centimeters of a solution of ammonium oxalate of various dilutions. If the ammonium oxalate has completely decalcified the blood after the mixture has stood twenty-four hours, no clot forms and the corpuscles sink to the bottom. The calcium content is therefore determined by the relation between the clotting and the strength of the ammonium oxalate solution, and is expressed in terms of ammonium oxalate. The coagulation time is determined by exposing a column of blood 5 centimeters in length and equal in volume to 5 cubic millimeters of mercury to a temperature of 37° C. in a water-bath. The tube is removed after an exposure of thirty seconds, and then at intervals of fifteen seconds. The first appearance of fibrin is taken as the coagulation time.

Paramore states that no absolute normal calcium content or coagulation time can be given, but as the calcium content has been found in non-milk drinkers to be 1/1500 oxalate of ammonium, and the coagulation time to be one minute and forty-five seconds, he used these as standards. He notes in this connection that milk is one of the chief sources of calcium in the diet, and that milk drinkers have an abnormally large lime content and a proportionately accelerated coagulation time.

The seven cases studied were five of urticaria, one of giant urticaria, and one of angioneurotic edema. Tests of the blood, made before giving treatment, showed a diminution of the lime salts in the giant urticaria alone, and a delayed coagulability in one urticaria and the angioneurotic edema. He then administered calcium chloride by the mouth in drachm doses, to increase the calcium content in the blood and to accelerate the coagulation time. In some cases but a single dose was given; in others it was repeated for several days. Repeated tests showed prompt effect. Clinically, all the cases except one showed improvement in the symptoms, and some were cured in a few hours and one after ten days. In one case of urticaria the reverse

experiment was tried of delaying coagulability. Citric acid (8.0) was given three times a day for six days. Under this treatment the urticaria increased. Then the patient took, on his own responsibility, a magnesium mixture to relieve his constipation. The immediate improvement of his urticaria shows that magnesium acts in these cases like calcium, which explains its value.

Paramore concludes from his experiments that the calcium factor in the blood is of primary importance, but inasmuch as the majority of the cases with diminished lime content associated with a defective coagulability do not have urticaria, it cannot be always the direct cause. A frequent cause is defective renal action, which throws extra strain upon the skin. If the skin can excrete the noxious materials easily and quickly, little harm results. If, on the other hand, the noxious materials are very irritating and not easily thrown off, a serous exudate or wheal is produced, or if the irritation is moderate, a papule. Therefore in the true decalcification urticaria a cure may be expected to follow the administration of calcium chloride, considerable improvement in the papular urticaria, but in the other forms there will be no result.—*Journal of Cutaneous Diseases,* March, 1907.

URETHROTOMY—AFTER-CARE.

Swinburne (*American Journal of Surgery,* February, 1907) notes that following internal urethrotomy the primary hemorrhage is usually slight, but that if erection occurs there is likely to be bleeding. This is common enough at night, particularly on the second, fourth, and sixth nights following operation. A still more potent factor in causing bleeding is the passage of sounds. Therefore Swinburne has adopted the practice of not passing instruments for two full weeks following internal urethrotomy, nor has he noticed any tendency to stricture incident to this practice. He calls attention to the fact that there are cases of inveterate urethral discharge associated with stricture which admits full-sized sounds but can be detected by a bulbous bougie. In such cases cure can be most effectually accomplished by an internal urethrotomy carried to such a point that the examining bougie will no longer detect a stricture. In some of these cases dilatation without cutting may be continued indefinitely without accomplishing good results.

SYPHILITIC ALOPECIA.

Klotz (*Journal of Cutaneous Diseases,* March, 1907) concludes a paper on this subject with the statement that alopecia or loss of hair is not a common or regular symptom of the early stages of syphilis. The slight loss of hair which is constantly taking place in healthy individuals as the result of the physiological change in the hair continues its existence through and beyond the course of syphilis, and must be taken into consideration before attributing to syphilis a loss of hair so slight as to pass unnoted or scarcely attract the patient's attention.

The same rule applies to numerous cases of slight seborrhea of the scalp, which under ordinary conditions would not be considered worthy of notice or treatment.

In a certain number of cases syphilis may be accompanied by a diffuse loss of hair, which may extend more or less over the entire scalp, varying in degree, similar to that observed after other infectious diseases, such as typhoid fever, erysipelas, etc.

In the absence of any discoverable local changes in the skin this alopecia is apparently the result of malnutrition of the hair and the entire skin as part of a general modification of the entire organism by the infection with the virus.

This alopecia is therefore not strictly a symptom of syphilis, directly due to the virus, but rather a complication.

This alopecia is directly dependent upon and in most instances proportionate to the general symptoms, may accompany the second period of incubation, and usually makes its appearance several weeks after the onset of the prodromal symptoms.

Although this alopecia may be very extensive and affect many portions of the

body, it shows a tendency to more or less complete restitution of the hair, unless the patient is too advanced in years or is a subject of hereditary tendency to baldness.

An alopecia occasionally occurs in the form of ill-defined irregular, small, sometimes coalescent patches of baldness, distributed principally over the back and upper portions of the scalp, and giving it a mangy or moth-eaten appearance.

This alopecia is observed almost exclusively in syphilitics, and is so characteristic that with extremely rare exceptions it is diagnostic of syphilis of the affected individual, either acquired or hereditary. It is a characteristic symptom of syphilis, and almost always occurs at a period more or less remote from the time of infection, usually not before the end of the first year and up to the end of the second year. It generally follows a very tedious course, although terminating in restoration of the hair.

In the absence of any discoverable anatomical changes of the skin due to a local specific process, it is very difficult to explain the origin of this alopecia in patches.

ON OPSONINS AND TREATMENT BY BACTERIAL VACCINES.

BUNCH (*Lancet*, Jan. 19, 1907) contributes an article of some length upon this subject in which he calls attention to the fact that destruction of typhoid and cholera bacilli can be brought about by lysins which are present in the corresponding immune sera after artificial inoculation, and that lysins have been assumed to exist in other diseases also. In diphtheria and tetanus antitoxins are employed clinically, which neutralize the respective toxins. Metchnikoff holds that the destruction of bacteria is carried out by the phagocytes alone, and ascribes the whole protective influence to them. It has, however, been shown that these, washed absolutely free from serum and the substance contained in it, have of themselves no phagocytic action on bacteria.

Buchner was able, by chemical stimulation, to cause the secretion into the pleural cavity of rabbits and dogs of leucocyte-containing exudations which possessed bactericidal powers stronger even than those of the blood or serum of the same animals. Under such conditions phagocytosis proceeded very actively. It is therefore difficult to decide as to whether their bactericidal action depended upon phagocytosis or upon alexins or antibodies contained in the exudate. By freezing the fluid and killing the leucocytes it was observed that the bactericidal power was in no degree lessened. Hence it was evident that the bacteria-destroying qualities of the fluid were dependent upon antibodies. Numerous observers have shown the presence in the blood of opsonins, a substance which becomes attached to the bacteria in such a way as to render them capable of absorption and destruction by the phagocytes.

Wright and Douglas assert that opsonins are destroyed by heat and therefore differ essentially from the immune body. In a considerable number of infections specific opsonins have been demonstrated. An increase of the opsonic condition of the blood may be brought about by the injection into the organism of vaccines. Of these the best known is the "old" tuberculin of Koch. The preparation is a clear, brownish fluid, somewhat viscid in the presence of glycerin, and diluted down before use according to the required dose, this dilution being accomplished just before injection by growing the tubercle bacilli in glycerin-veal broth in the presence of a sufficiency of oxygen for from six to twelve weeks, and then sterilizing, evaporating, and passing twice through a Chamberland filter. There results a glycerin solution of the cellular metabolic products of the organisms containing one or more toxic bodies, which may be either of the nature of a ferment, albumose, or alkaloid. This was used chiefly for diagnostic purposes in doses of one cubic millimeter, which in tuberculous patients produces a rise in temperature. If this reaction is absent double the dose is given two days afterward, and if there is still no reaction double the last dose is given after another two days. If the reaction does not show itself after the last dose the patient is probably not tuberculous.

This tuberculin, though sterilized, is much less used for therapeutic treatment than tuberculin Koch T. R., which is prepared from the virulent culture of tubercle by drying, grinding up the bacilli, and by washing and removing the extracellular toxins, which chiefly constitute the "old" tuberculin. The residue is made into an emulsion with distilled water after trituration, centrifugalized, and the supernatant fluid pipetted off. Twenty per cent of glycerin is added to preserve it, and it is standardized so that 1 cubic centimeter contains 10 milligrammes of solid substance. Dilutions can then be made to any desired dose, and these are heated for an hour at 60° C. in capsules so as to kill any possibly contained living bacilli. The dose to begin with is 1/1000 milligramme, usually less. It is injected subcutaneously in a cleanly manner. These injections will cause neither constitutional nor local reaction. The subsequent dosage both in regard to amount given and intervals between doses is regulated by the opsonic index to tubercle. The large doses—*i.e.*, one or two milligrammes —are no longer given.

The elaboration of protective substances in the organism can be induced by chemical substances or vaccines prepared from bacteria other than the tubercle bacillus. The author states that he has injected vaccines of pneumococci, streptococci, and the various forms of staphylococci during the last eighteen months. These vaccines are emulsions of that species of organism which has produced the disease in the patient, and inasmuch as different strains of the same organism differ greatly the vaccine should, when possible, be prepared from a pure culture of that particular organism grown directly from the lesion to which it has given rise in the patient. This is sometimes a difficult matter. Thus in pneumonia a mouse must be inoculated with the patient's sputum, or in empyema with the pus, and a pure culture of the pneumococcus obtained from the mouse's heart blood, and a vaccine made from the emulsion. The emulsion prepared from such a culture must be centrifugalized and standardized so that a certain volume contains the dead bodies of a certain known number of bacteria, plus their products of metabolism. The initial dose must always be small, since patients react very differently, and care must be taken not to induce too marked or too prolonged a negative phase. Inoculation with the vaccine is followed by a period of intoxication characterized by decline in the antibacterial power of the blood, called the negative phase. This is followed by a positive phase, in which the antibacterial power of the blood is greatly increased. For tubercle inoculations this positive phase may be maintained for as long as a month; very often it drops at about the end of ten days. If too large a dose be given the positive phase may not make its appearance at all. The important point in dosage is the use of the minimal dose which will produce a satisfactory response, nor must this be increased until it ceases to produce its effect; nor should it be repeated until its effect is passing off. Since the increase of the opsonic index in the case of local tuberculosis is without avail unless the blood be brought directly in contact with the bacteria, Bier's congestion is a powerful adjuvant to the tuberculin treatment in peripheral lesions.

Bunch further notes that a diminution of the viscosity and coagulability of the blood can be greatly accelerated by the internal administration of decalcifying agents, such as citric acid. Often operative measures are powerful adjuvants.

Bunch states that when the opsonic index to tubercle is above 3.0 a positive diagnosis of tuberculosis may be made. An index to tubercle below 0.8 is undoubtedly abnormal and indicates either a strong disposition to infection, such as is to be expected in a member of a family several of whom have already shown signs of pulmonary tuberculosis, or that infection has already taken place.

An index appreciably above normal means, as a rule, that infection has already taken place, especially if repeated estimations show considerable fluctuations of the opsonic index.

Bunch reports two cases which perhaps show the admirable results to be achieved by combination of injections of tuberculin with the surgical procedure.

CHRONIC URTICARIA AND HYPOTHYROIDISM.

LEOPOLD-LEVI and DE ROTHSCHILD (*Compt. Rend. Soc. de Biol.*, lxi, 35, 1906) think that urticaria is not an uncommon expression of hypothyroidism, and represents the cutaneous localization of an acute intoxication. They give an illustrative case of a woman who suffered from successive daily outbreaks of wheals and erythema. She also complained of irregular menstruation, increasing obesity, fatigue, and sleepiness. The thyroid was increased in size on the right. Two cachets of thyroid extract were given daily with immediate improvement. The patient stopped treatment after nine days, when all the symptoms returned. She then resumed the thyroid, and has taken it irregularly ever since, with the result that there has been no return of the eruption except for a few scattered lesions, especially at the time of the menstrual period.—*Journal of Cutaneous Diseases*, March, 1907.

SURGERY OF THE THORAX.

In many operations on the wall of the chest it is necessary to open the pleural cavity freely, and REHN (*Archiv für klinische Chirurgie*, Band lxxxi, 1) praises the results obtained, under these conditions, by suturing the lung to the chest wall.

The apparatus of Sauerbruch or Brauer should be used when possible, but if it is not obtainable almost as good results may be had if a large, round, curved needle is passed deep into the lung, before the pleura is cut, and the lung thus fixed to the chest wall. After the pleura is opened other sutures are placed in such a way that they do not interfere with the operation. These sutures have the advantage of lessening the tendency to infection, and of limiting this if it does occur. After the operation the pleura must be closed air-tight. This cannot be effected by closure of the pleura only; all the layers of the wall must be brought together, a plastic operation being performed, if necessary. Even expectation of infection does not permit drainage to be used. It is better to seal the pleural sac, and later open it after adhesions have formed. Cases of tumor of the chest wall, in which this method was used with good result, are reported.

PERITONITIS FROM SALPINGITIS IN CHILDREN.

The frequency with which rapidly fatal peritonitis occurring in young girls was associated with salpingitis led RIEDEL (*Archiv für klinische Chirurgie*, Band lxxxi) to go over the histories of his appendicitis operations to see whether any cases had proved to be salpingitis.

He found that 48 girls under ten had been operated on for suspected appendicitis, and of these 8 proved to be peritonitis from salpingitis. Of 348 females over ten, only 6 had salpingitis.

The affection is characterized by a very rapid course and constantly fatal termination. Bacteriologically no gonococci were found, only staphylococci and streptococci. The infection extends from the uterus, but it is not certain how this was infected. There was no suspicion of misuse in any case. The diagnosis from appendicitis is impossible, and no time should be lost in vain attempts to make it, immediate operation being the only hope of saving life. The onset is acute, with fever, abdominal pain, tympanites, apathy, and later cyanosis and rapid emaciation. The examination of the abdomen is inconclusive. On opening it the intestines and omentum are found covered with fibrinous masses or pus. Pus is found in the tube of one side, but the fimbria is free and the tube little enlarged. The uterus is usually red and congested, the external parts normal. The bad prognosis of this condition should lead all surgeons to warn the parents of the possible danger before operating for suspected appendicitis in girls.

EXCISION OF THE RECTUM AFTER TREATMENT.

In contrast to most operations, the result of which depends mainly on the technique employed, the success obtained in removal of the rectum by the sacral route depends mainly on the care given to the patient after operation, and HOCHENEGG (*Deutsche Zeitschrift für Chirurgie,* Band lxxxv) mentions a number of precautions which must be observed if good results are obtained.

These patients must not be permitted to lie on the back, as this causes mechanical closure of the false anus and wound and leads to damming back of secretion, which may be forced into the abdominal cavity, causing peritonitis. After these operations pelvic abscess is not unlikely to follow, and it is therefore dangerous to raise the pelvis, as this may cause the abscess to rupture into the peritoneal cavity. The use of the knee-elbow position when changing dressings is especially to be avoided. An exception may be made in case of prolapse, the foot of the bed being kept slightly raised. The same may be done in case after-bleeding is troublesome. Emphasis must be laid on retention of urine, because an empty bladder may be assumed from the lack of suprapubic dulness. The bladder falls into the space formerly occupied by the rectum, and even when overfilled may not cause any dulness on percussion. Disturbance of the pelvic plexus of nerves interferes with the normal bladder reflex, and retention will often be overlooked unless all patients who do not pass urine within twelve hours are catheterized. Retention is more likely to lead to cystitis than any other condition, as bacteria always penetrate the wall of the bladder from the wound.

The most important question concerns the stools. The later the first stool occurs and the more solid it is the less the danger of infection. In cases with stenosis it is dangerous to give purgatives before operation, as the bowel will not be completely emptied and the liquid stool following soon after the operation will cause infection of the peritoneum. The stool should be delayed as long as possible by administration of 10 drops of laudanum t. i. d. If the wound is sutured this fecal mass must be softened by enemas or the stitches will tear out. The wound is freely irrigated after each movement and then packed loosely with iodoform gauze. In many cases there is an excessive tenderness of the gluteal region after the operation, and great care must be taken not to irritate the part, as reflex contraction of the muscles will tear the wound wide open. After the patient is well it is best for him to empty the bowel as completely as possible at each stool, forcing with the abdominal muscles. Otherwise there will be constant dribbling of feces. If emptying is thorough, a bath sponge kept against the anus will prevent soiling.

LONGITUDINAL FRACTURE OF THE PATELLA.

This rare fracture is considered in detail by MEYER (*Deutsche Zeitschrift für Chirurgie,* Band lxxxv). It is probably more common than stated, as many of the cases show little disability after the injury and are looked upon as sprains. There is usually a history of direct trauma, with severe pain at the moment of injury, and pain subsequently on bending the knee. The person may, however, walk a long distance immediately after being injured. The disability does not disappear as soon as one expects in a sprain, and this may attract the attention of the patient or the physician, and lead to a more thorough examination. If the knee is examined soon after the injury, there will be tenderness of the kneecap and pain in that region when the knee is flexed, not very definitely localized. In most cases the line of fracture cannot be felt on the anterior surface of the bone, but if the patella is pushed outward, exposing the posterior surface, on this a longitudinal groove may be found. Effusion in and around the knee soon follows, and is later accentuated by the callus. It is difficult to obtain satisfactory *x*-ray pictures. The bones of the leg prevent seeing clearly in pictures from behind, so it is necessary to force the patella out and take a view diag-

onally. A fold of the skin may resemble a fracture in its shadow. Prognosis is good, and rest in bed is only required for a few days. Pain prevents overexertion. Suture is rarely required.

THE INFLUENZA KNEE.

An important contribution to the literature of rheumatoid diseases is made by FRANKE (*Deutsche Zeitschrift für Chirurgie,* Band lxxxv) who discusses at length the articular lesions caused by the influenzal virus.

These articular conditions are most often seen in those chronic afebrile states which follow acute attacks of influenza, and which are due to the continued presence of the bacillus in the tissues. These chronic infections may be recognized by a tendency to chilliness and sensitiveness to exposure, with liability to "colds." The throat is characteristic; the anterior pillars and edge of the palate are red, while the vault of the pharynx and the tonsils are not affected. The tongue shows large red papillæ on a grayish coating. There is often a sense of constriction which may even resemble the sensation of croup. The color of the skin is grayish, unlike that of other anemias. The spleen is found enlarged and the heart is irregular or nervous. The influenza bacillus is isolated with the greatest difficulty, but had been found years after acute infection. There are often harsh sounds at the apices of the lungs.

The articular changes are also absolutely characteristic. The knee and small joints of the fingers are most often affected. The bone is inflamed, and in the fingers the paraarticular structures also. The tenderness of the knee is particularly noticeable on the inner condyle—not over a nerve or where any pressure comes on the cartilage. This location is diagnostic. The pain is dull, but it causes a considerable amount of disability. The onset is slow, and there is little or no tendency to permanent stiffness or suppuration. The knee-jerks are increased, although other reflexes are normal. The cases in which pathologic study could be made showed an osteitis with softening immediately below the cartilage. The treatment consists in putting the joint at rest as far as possible, and especially the avoidance of all sudden strains. Heat externally may relieve the pain, and sodium salicylate with antipyrin is of benefit in most cases, especially in those with enlarged spleen. Potassium iodide and various other antirheumatics are of no value. If possible, rest in bed should be required.

ACUTE DILATATION OF THE STOMACH—ITS RELATION TO MESENTERIC OBSTRUCTION OF THE DUODENUM.

CONNOR (*American Journal of the Medical Sciences,* March, 1907) considers at length the subject of acute dilatation of the stomach and its relation to mesenteric obstruction of the duodenum. The condition may develop during an apparently normal convalescence from operation or from severe illness. The dilatation is not dependent upon a single etiological basis, but it seems to have been demonstrated during the last few years that perhaps the most important single cause is the sudden incarceration of the lower end of the duodenum between the root of the mesentery which runs in front of it and the vertebral column behind. Although in most cases the disease has been rapidly fatal, evidence is accumulating to show that in many instances life may be saved by timely recognition and suitable treatment.

The author bases his study on 102 cases, one of which is his own and another of which he reports through the courtesy of Ewing. The age at which the condition develops is most apt to be between ten and forty years, but extremes of three and sixty-nine years have been observed. As to the conditions which have bearing on the origin of the dilatation, 41 per cent occurred after some form of surgical operation, usually upon the abdominal cavity or the large joints. No case of acute dilatation of the stomach followed operation upon that organ. When it follows operation it usually occurs within the first or the second

twenty-four hours, but has been observed as late as two weeks after operation. In 21 cases it has followed some severe or wasting disease, chiefly pneumonia or tuberculosis in its various forms. Several cases have occurred after injuries, after errors in diet, or associated with deformity of the spine. In four cases acute dilatation came on in persons who had previously appeared in perfect health.

The chief and common symptoms are vomiting, pain, abdominal distention and tenderness, constipation, thirst, scanty urine, and rapid collapse. Vomiting is the most constant and most important symptom. It has been present in over 90 per cent of cases. The vomiting is persistent, incessant, profuse. The large amount brought up is surprising. The material is thin, watery, usually greenish, and rarely feculent. The duration of the disease is generally less than five days, but may be as much as sixteen days.

The author has collected 18 fatal cases of acute dilatation of the stomach due to mesenteric obstruction, besides several non-fatal cases which were ascribed to that cause.

The effectiveness of the treatment will depend largely upon the time at which it is begun. When the stomach has become extremely dilated and collapsed, treatment has often been unavailing. If the disease is recognized early enough treatment is in most cases very gratifying in results. The first step is the complete emptying of the stomach with the tube, which should be made to reach the most remote parts of this organ. This should be repeated several times in twenty-four hours. Food or drink by the mouth should be interdicted. The loss of fluid should be made up by saline enemata or by hypodermoclysis. Nutrition should be maintained by rectal feeding. In many cases this is all the treatment that is needed. If the obstruction is due to a duodenal kink or to the weight of a dilated and overloaded stomach, the mere emptying of the stomach and keeping it empty will suffice. If, however, the dilatation is due to constriction by the root of the mesentery, it is necessary to change the position of the patient so as to relieve this constriction. The constriction is produced by the traction of the intestines downward and backward, usually by their being displaced downward and dragging over the brim of the pelvis when the patient is in the dorsal position. Hence the patient must be required to lie upon his abdomen, and if his condition permits it, should assume the knee-elbow position at intervals. Even to lie upon the side has been sufficient in some cases. Inasmuch as a considerable percentage of cases of acute gastric dilatation are due to mesenteric constriction of the duodenum, all cases of such dilatation should be given the advantage of the postural treatment.

FECAL DROWNING—ITS PREVENTION IN OPERATIONS FOR INTESTINAL OBSTRUCTION.

Willy Meyer (*Surgery, Gynecology, and Obstetrics,* March, 1907) regards Kausch's esophageal narcosis-tube as a most important addition to the armamentarium in operations for intestinal obstruction, believing it to be the only operation at our disposal to avoid the much-dreaded fecal drowning. Briefly the apparatus consists of a rubber balloon through which passes an ordinary soft-rubber stomach-tube. This balloon is 7 centimeters in diameter when fully inflated, and is securely fastened around the tube at both points of passage, the lower being two inches above the eye at the end of the tube. Emerging together with the stomach-tube from the upper end of this balloon, and passing along the same, is a thin rubber tube, which a few inches from the outer end of the stomach tube separates from the same to enter another bulb of exactly the same size as the lower one, thus forming the connection between the two balloons at either end of the apparatus. Upon the opposite side of the outer balloon a small piece of thin tubing is made to project, for the purpose of inflation, which may be done by means of a hand syringe. Before beginning narcosis the apparatus, with the lower bulb pressed

empty and well anointed, is introduced into the stomach. Then the bulbs are distended and the small projecting tube is plugged or clamped. The narcosis-tube is pulled upward until it meets resistance, which means that the lower bulb presses against the cardiac opening, thus rendering it impossible for any stomach contents to pass through the cardia. Every drop has to find exit through the tube. It is necessary to have an assistant control the proper inflation of the apparatus during the entire operation by continuously and gently pulling the tube upward in the same direction during the operation; he will thus guarantee the proper position of the tube.

While the tube is *in situ* the saliva cannot be swallowed. The patient's head should therefore be turned sidewise and the saliva wiped out from time to time. A slight Trendelenburg posture facilitates the outflow of the saliva. The instrument remains undisturbed until the patient has fully come to after anesthesia. If it is properly placed, all the fluid of the intestinal tract, which continuously regurgitates into the stomach during operation, is carried through the tube into a receptacle placed underneath the operating table.

SURGICAL TREATMENT OF TUBERCULOSIS OF THE KIDNEY.

KELLY (*Surgery, Gynecology and Obstetrics,* March, 1907) states that he has yet to see a spontaneous or medical cure in a case in which tuberculosis of the kidney has been clearly demonstrated. Even under most favorable hygienic surroundings he has always noted the advance of the disease. He observes that with rare exceptions tuberculosis sooner or later involves the bladder, and that this may take place early. He holds that disease is always unilateral at the start; if general or miliary tuberculosis be excluded, it is practically always hematogenous in origin, primary tuberculosis of the bladder being extremely rare. Nephrotomy he advises only in desperate cases of pyonephrosis, and this must always be followed by nephrectomy when the other kidney is not tubercular. If both kidneys are extensively involved, nephrotomy is the only procedure feasible. It often effects a remarkable improvement in the patient's general condition. As a preliminary to nephrectomy, nephrotomy may be of inestimable value. Two months is regarded as a long enough period for the patient to rally sufficiently to stand a nephrectomy, which is best done by the intracapsular method. Partial nephrectomy affords a chance now and then of rescuing the bad kidney; it is indicated when both kidneys are involved, and is especially indicated when half a horseshoe kidney is involved.

The operation of widest application, and that which should always be done if possible, is nephrectomy. In the comparatively exceptional case of one-sided kidney tuberculosis, with the other kidney healthy, and no tuberculosis evident in the bladder or elsewhere in the body, no one should dispute the imperative indication to remove the diseased kidney. Such patients often seem to be in robust health and the local symptoms appear trivial, but it should be borne in mind that no case of spontaneous healing has been demonstrated.

Kelly states that he has twenty cases of nephrectomy in which the disease was unilateral and without bladder involvement, or only slight lesions about the ureteral orifice, and that all these cases, without exception, remained in perfect health over a period extending from two to ten years. Hence the proper time for nephrectomy is as soon as diagnosis has been made. When the disease is further advanced, the difficulties multiply rapidly; the likelihood of disease in the second kidney is increased; grave bladder troubles are present, rendering topical diagnosis very difficult or even impossible; perirenal changes occur, greatly adding to the seriousness and dangers of the operation. Out of thirty-six advanced cases Kelly has had four deaths, and five more within periods of from two months to four years. Involvement of the bladder is a marked indication for nephrectomy, since as long as the tubercular kidney pours

down infectious material the bladder cannot be healed, whereas it often yields promptly after nephrectomy.

SURGICAL TREATMENT OF HIRSCHSPRUNG'S DISEASE.

This affection, which consists in a congenital dilatation of the sigmoid flexure and descending colon, is always fatal, according to ROTH (*Archiv für klinische Chirurgie,* Band lxxxii, 1), unless it is treated surgically.

Several operations have been suggested, but none have given entire satisfaction. Roth treated a case recently by a new procedure. Any operation must be rapidly made, as the children bear anesthesia badly. In the case reported, an incision was made in the middle line of the abdomen, and the distended portion of intestine drawn out. This was brought together into a loop, and the wound closed around it, leaving the loop of bowel outside. Three days later the loop was resected, and twenty-five days later a clamp was applied to remove the spur. The fistula was closed by a plastic operation three weeks later. The results were good. No stricture followed.

TETANUS—PROPHYLACTIC SERUM INJECTION.

The relative frequency of tetanus is largely a matter of locality, according to BUSCH (*Archiv für klinische Chirurgie,* Band lxxxii, Heft 1), who finds that it is very rare in Berlin, only three cases having developed in over 4000 accident cases in the last eighteen years. Twenty-seven cases with developed tetanus were also seen.

Busch does not consider it necessary to use it in all cases of open wounds, as recommended by some. In country districts tetanus may be more common, and it seems to be especially frequent after injuries of the feet in marching soldiers. Most of the cases seen by him had wounds infected with bacteria of putrefaction, and he therefore recommends antitoxin in such wounds. In cases with large contused wounds, in which a large amount of necrosis is inevitable, it is indicated, especially if such a wound is contaminated with earth or street dirt. In cases with large burns or severe frost-bite it is also of value, tetanus being fairly frequent after such wounds, if gangrene occurs. For some unknown reason tetanus is extremely likely to follow wounds with cartridge paper, and all wounds inflicted by firearms at close range, as well as all wounds in employees of cartridge factories, should be injected.

OPERATIONS ON THE POSTERIOR CRANIAL FOSSA.

Tumors of the base of the brain may be safely approached, according to KRAUSE (*Archiv für klinische Chirurgie,* lxxxi, 1), who reports several operations performed in this region.

The occipital region of the brain is best exposed by a flap of bone and scalp, with the base down. The bone flap approaches the middle line as far as is possible without danger to the longitudinal sinus. Upward it extends beyond the transverse sinus and laterally exposes the sigmoid sinus. It is necessary to expose both these vessels. The flap having been turned down, the dura is cut just inside these vessels and also turned down. This exposes the cerebellum, and by leaning the head to one side or the other the posterior surface of the petrous portion of the temporal bone is laid bare, and a small vein passing from the petrous sinus to the cerebellum is ligated and severed. The lobe can then be carefully displaced with the brain spatula, and the facial and auditory nerve roots exposed. If instead of pushing the hemisphere inward we push it more upward, we expose the roots of the tenth, eleventh, and twelfth nerves. Great care must be taken not to tear the pia or the ventral layer of the arachnoid. With care the entire posterior fossa can be explored and any extracerebellar tumors removed. If no lesion is detected by sight or touch, the cerebellum may be incised to a depth of an inch without danger. If, in spite of pressure symptoms, nothing is found, the fourth ventricle may be tapped, to determine the existence of internal hydrocephalus.

REVIEWS.

MODERN MEDICINE: ITS THEORY AND PRACTICE. In Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., and Thomas McCrae, M.D. Volume I: Evolution of Internal Medicine—Predisposition and Immunity—Diseases Caused by Physical and Organic Agents, by Vegetable Parasites, by Protozoa, by Animal Parasites—Nutrition—Constitutional Diseases. Illustrated. Philadelphia and New York: Lea Brothers & Co., 1907. Price, cloth, $6.

We congratulate the editors and publishers upon the appearance of the first volume of what bids fair to be the standard handbook of clinical medicine in the English-speaking world for some time to come. Much has been hoped of it, and no greater praise can be given than to say that it realizes our expectations.

We have no space here to discuss the relative value of the system and the monograph. We will say only that Osler's Medicine is an example of the system *par excellence*, consisting of comparatively short articles by men whose work lends authority to their statements, arranged in a consistent whole. Such a book is more comprehensive than a monograph can be, and yet has little in common with the great library of medical works published under Nothnagel's name, which is not a system as we have come to understand the term.

No work of the character or scope of Osler's Medicine has appeared in English since the publication of Pepper's first System in 1885. Both are complete and systematic presentations of Internal Medicine, and a comparison of the two books is an impressive demonstration of the rapidity with which the art of medicine is becoming an exact science.

Surely in no quarter of a century in the history of medicine have there been so many advances in so many different fields. The period covers the discovery of the tubercle bacillus and the development of bacteriology, great progress in our knowledge of protozoa and other animal parasites, the transmission of disease by insects, practically the whole development of the pathology of the blood, of immunity, and of the morbid physiology of internal secretion. It includes Pawlow's work, the discovery of the *x*-rays, serum therapy, and many other advances that have changed profoundly our ideas of diagnosis and therapeutics. Such a comparison makes us realize that internal medicine has become a subject of such magnitude and complexity that no one can hope to cover the whole field adequately. To do this there must be a collection of articles written by specialists who have been chosen and directed by editors of scientific attainments and clinical experience, and with minds broad enough to perceive the intimate relations that Physics, Chemistry, and Biology have come to bear to the Science of Medicine. Of the twenty-two contributors to this volume, six are not medical graduates, and this is a very significant indication of the manner in which medicine has broadened its horizon and is seeking the help of the allied sciences.

The introductory remarks by Dr. Osler which take the place of the usual preface are upon the Evolution of Internal Medicine. It includes a historical review which is scholarly and interesting, but the most suggestive part of the introduction is his advice to the medical profession for the future. He urges the need of organizing our resources to get the most out of them for teaching and research, the need of better preliminary training at the bedside and in the laboratory, the fact that the hope of the profession is in the general practitioner who finds it possible to keep abreast of scientific development and to employ the newer methods in his daily practice.

The first section consists of an article by Adami upon inheritance and disease. The recent advances in our knowledge of heredity make some consideration of the subject not only desirable but necessary for a satisfactory understanding of predisposition and immunity.

Part II includes Diseases Caused by Physical Agents, by Alfred Gordon. The chapters are upon light, *x*-rays, electricity, air, heat, and cold. Dr. Gordon has rather a

hard task, because his subject, although important, lies in no definite province of medicine. We question the fitness of a neurologist to pass upon such subjects as the metabolic changes produced by the *x*-rays. This is probably the reason why he omits all reference to the serious disturbance of metabolism in certain cases under the influence of the *x*-rays as described particularly by Edsall. Again, it is the generally accepted opinion that sunstroke is a toxemia, and its treatment is above everything eliminative. Yet this is hardly touched upon by the writer.

Part III consists of four chapters by Edsall upon Diseases Caused by Chemical Agents. Their titles are Chronic Lead Poisoning, Chronic Arsenic Poisoning, Poisoning by Other Metals, Carbon Monoxide, Illuminating Gas, Carbon Bisulphide and other toxic agents. To any one who knows Dr. Edsall's power of thorough and scientific work in any task that he may undertake, the excellence of these articles is not surprising.

Diseases caused by Organic Agents occupy Part IV. Chapters IX and X, upon Alcohol, Opium, and Cocaine, are both by Alexander Lambert. That upon Alcohol is especially complete.

In Chapter XI Novy writes upon Food Poisons, and Chapter XII is by Noguchi upon Snake Venom.

Part V contains two chapters by Wright upon actinomycosis and vegetable parasites other than bacteria.

Then follows three very complete and interesting articles upon protozoa and the insect transmission of disease. Calkins writes of protozoa, Howard of mosquitoes, and Craig of malarial fever. Three more papers by Stevens upon blackwater fever, Bruce upon trypanosomiasis, and Strong upon amebic dysentery, make up Section VI.

Naturally, Stiles has been chosen to write Section VII upon animal parasites, which is entirely satisfactory.

The volume contains no more important sections than those upon the general consideration of nutrition by Chittenden and Mendel, and autointoxication by Alonzo Taylor. Some knowledge of normal metabolism is absolutely essential for a proper understanding of nutrition and dietetics, and surely there is no more important branch of therapeutics or one of greater interest to the practitioner. No better expression of the subject could be asked for. It is concise and complete, and is written with the authority which comes from a mastery of the subject. It is the best article for its length upon nutrition that we know of in the language.

Besides considering in general the mechanism of metabolism it contains an excellent and practical section upon dietetics. The well-known views of Chittenden which advocate the habitual use of the proteid minimum in our diet are considered at length, and a review is given of the work of the writers upon this subject. That this important question is regarded from only one standpoint and is not discussed pro and con is the one part of the article open to criticism. We believe that the writers do not mean to deny that there are two sides to the problem.

Alonzo Taylor considers the Autointoxications in Chapter XIII, and Autointoxication associated with Protein, Purin, Carbohydrate, and Fat Metabolism in Chapter XIV. This is a consideration of pathological metabolism, and is an exceedingly comprehensive and valuable essay. Such a consideration of the subject has been greatly needed, for it deals with several subjects around which are grouped more false hypotheses than can be found in any other branch of medicine. We refer to chronic intestinal autointoxication, the so-called uric acid diathesis, gout, and uremia. The much too popular misconception of these conditions needs ruthless pruning, and no better man could have been found to do this than Professor Taylor. However, while we applaud his efforts to clear away the cloud of medical superstition which envelops these diseases, we feel that perhaps he goes too far in completely ignoring the fact that there are some morbid states that can best be explained upon the assumption of chronic autointoxication by gastrointestinal poisons, although we cannot demonstrate the existence of these poisons experimentally. Indeed, we think that Professor Taylor him-

self believes that such toxemias exist, and we fancy that it is only an excess of zeal in demolishing false gods that makes him forget to state the problems in autointoxication that confront us. Let him not only lead us out of error, but point out the road to truth as well.

The article upon diabetes mellitus and gout are by Futcher. They are among the best papers in this volume, although they deal with very complex diseases in which the pathology is not yet certainly understood. We note the admirable summary of the pathogenesis of diabetes upon page 786 as follows: "In health the pancreas and muscles (and possibly other tissue cells) produce substances which by their interaction on each other yield a glycolytic body—call it a glycolytic ferment if we will—which is necessary for the proper combustion of the glucose in the body." Of course, in diabetes this ferment is not produced.

Under gout it is interesting to remark that gout in Baltimore is only one-third less frequent than in London.

Articles upon obesity by Anders, rickets by Still, and scurvy by Robert Hutchison complete the last section.

As a rule the articles of the first volume are of very even excellence, and it can be considered a distinct success. If the succeeding instalments are of the same high standard, then the whole book will be worthy to occupy the important position in medical literature demanded for it by the appearance of the name of the chief editor in its title. J. D. S.

A Treatise on the Principles and Practice of Medicine. By Arthur R. Edwards, A.M., M.D. Philadelphia and New York: Lea Brothers & Co., 1907.

It is but natural that a teacher should wish to publish a text-book which shall serve his student as an expression of his views. This has evidently been Dr. Edwards's purpose in presenting the volume under discussion, and considered from the standpoint of a text-book it should prove very satisfactory. The book is very well arranged for the student. Its statements are clear and concise, and there are frequent tables of differential diagnosis. Indeed, in this regard it resembles a compend rather than a treatise upon medicine. These points in its arrangement, which recommend it as a book for undergraduates, rather detract from its value as a reference book of diagnosis for the practitioner, who consults an authority for information about exceptional and obscure symptoms and not for well-known facts. Where a medical student can use a differential table of symptoms to great advantage in mastering fundamental facts of diagnosis, this method of presenting the subject to the practitioner is too dogmatic and inflexible.

The arrangement of the subject-matter is that usually followed in such a work. The classification of diseases is scientific and in accord with the most advanced etiology. As Dr. Edwards says in the preface, much attention has been given to treatment. He gives not only the principles upon which the therapeutics of each disease is based, but the methods of treatment are described in some detail and numerous prescriptions are included. In this respect the work should prove useful and popular with the practitioner.

The sections upon the diseases of circulation, respiration, and kidneys are well treated and are the best in the book. That section upon the gastrointestinal tract and the liver and pancreas is on the whole satisfactory, though not so uniformly good as the chapters just mentioned. The book is quite profusely illustrated with engravings and plates, some of which are in colors. We can cordially recommend Dr. Edwards's book as one which will be of great help to the undergraduate student, and which will offer many suggestions to the practitioner, especially in treatment.

J. D. S.

Hypnotism: Its History, Practice and Theory. By J. Milne Bramwell, M.B., C.M. Second Edition. Alexander Moring, London, 1906.

Mr. Bramwell presents this subject in a very interesting manner in this volume, which is a complete treatise upon hypnotic phenomena, and can be recommended as a reference book upon this subject. The student will find in its pages correct data con-

cerning hypnotism arranged in chronological order. The methods for inducing sleep are well described, but the author's own method, on which he lays some emphasis, does not, in our judgment, differ materially from that of many others. The question naturally arises as to whether hypnotism ever amounts to more than ordinary suggestion in an awakened state. The author states that his field of work has been confined to hysteria, neurasthenia, and other functional diseases, and every worker in neurology knows that equally good results are invariably obtained by simple methods of emphatic and impressive talk to the patient. The statement of the author that he has successfully treated cases of insanity by hypnosis is, we think, open to doubt, and still more so the statement that epilepsy was considerably relieved, if not cured, by hypnotism. As to the wisdom of subjecting neurotic patients to hypnosis there is considerable doubt, since by this means we are prone to make them doubly unfortunate, adding evil to a pre-existing evil. As we have already said, this book is of value in providing historical information as to the origin and practice of hypnotism, but the method itself is one which cannot be recommended to physicians in general, and therefore the book must have a very limited field of influence.

A. G.

THE STANDARD FAMILY PHYSICIAN. By Professor Carl Reissig, M.D., and Smith Ely Jelliffe, A.M., M.D., Ph.D. Volumes I and II. The Funk and Wagnalls Company, New York, 1907. Price $15.00 in buckram; $20.00 in three-quarter morocco.

This work of two volumes, of over 500 pages each, is, in the words of its title-page, "a practical international encyclopedia of medicine and hygiene, especially prepared for the household," not only by the Editors, whose names have already been mentioned, but by a considerable number of other contributors in this country and abroad, thirty-two of them being Europeans and ten of them Americans, of whom perhaps the best known are Dr. Butler, of Brooklyn, and the late Dr. Fowler, of the same city. The volume opens with some preliminary information in regard to the family physician, and the structure and functions of the healthy human body, the anatomy of which is quite accurately described, including the organs of special sense and the organs of generation. After this there are some general remarks upon disease, then upon the diagnosis and treatment of disease, and then the various diseases of the different organs are discussed, with the means which should be exercised for their relief. The various poisonings, skin diseases, and the surgery connected with deformities, accidents, inflammations, etc., are included. Both volumes are copiously illustrated.

Of the statements which are made in this book, so far as their scientific accuracy is concerned, we find nothing to criticize. The collaborators are, of course, attempting to perform a task which is exceedingly difficult because, on the one hand, they naturally desire to be accurate, and on the other hand they experience the difficulty which always arises when medical men attempt to make persons who are not educated in regard to medical facts clearly understand medical problems. Our own view is that while books of this character in a concise form are found useful in the household where no physician can be obtained, the exhaustive considerations of the causes, diagnosis, and treatment of disease, when placed in the hands of the laity, often produce results which are undesirable. As illustrating what we mean we think that it is quite unnecessary to present a picture of a woman suffering from far-advanced elephantiasis of the lower extremities, or to show three girls with grinning faces who are subjects of maniacal delirium. So, too, we think that the very well-executed colored plate which shows the forms of calculus and an appendix ulcerated by a fecal calculus will probably serve to alarm a certain number of persons who have no means of determining the relative importance of certain subjects. The picture of a girl taking a shower-bath in a bathing suit seems hardly necessary, in view of the fact that there is a very good colored manikin illustrating human anatomy inserted between the pages of the volume.

On the other hand, there are a very large number of illustrations which are exceedingly useful and appropriate for a book of this character, such, for example, as the beautiful colored plate showing the various forms of mushrooms, edible and poisonous, or that which differentiates between poisonous and non-poisonous herbs which are frequently met with in gardens or elsewhere. Then, too, there are a very large number of illustrations which are valuable in that they instruct mothers and nurses to care for the sick, as in lifting persons who are ill or injured, and in caring for them in the way which is so essential if the physician is to obtain good results from his remedies. For such departments as these we have nothing but the warmest terms of praise. On the other hand, the therapeutic dose-table or index which closes the second volume seems to us capable of doing much harm. Even with medical men definite and dogmatic abbreviated statements as to the use of drugs in the treatment of disease are sometimes misunderstood. There are few physicians who would like to put a book in the hands of their patients in which conium is said to be useful for melancholia, heart troubles, liver engorgement, mania, scrofulous ophthalmia, etc., with the further statement that the dose of the fluid extract is 2 to 6 drops and that of the extract ½ to 1 grain. Such a form of advice employed by the laity without competent medical advice, in this and a large number of other instances which might be cited, we think is unwise. So, too, the large plate which illustrates the localization of areas of tenderness in the body in connection with deep-seated or organic disease is quite qualified to produce a host of symptoms in a neurasthenic patient, and the line reading from a painful spot in the nape of the neck to the words "cerebrospinal meningitis, cerebral tumors, constipation, neuralgia, caries of teeth, masturbation, and ear diseases" would make an imaginative man, or woman, believe that both "feet were in the grave."

As a matter of fact, these volumes are likely to be very much more useful to physicians than to the laity, and many of our readers can gain much excellent information from them. In those instances in which a physician has an exceedingly sensible patient who is going to be so situated as to be unable to call in a competent practitioner, these volumes can be heartily recommended as being correct in the advice which they give. The work of the American editor and his associates has been performed in a very praiseworthy manner, and by his skilful touch the book has been materially improved and made more useful for English-speaking readers.

FOODS AND THEIR ADULTERATION. By Henry W. Wiley, M.D., Ph.D. P. Blakiston's Son & Company, Philadelphia, 1907.

This volume, which covers about 600 pages, is of more than ordinary interest at this time because it deals with a subject which has been brought before the eye of the physician and the laity with extraordinary clearness by reason of the passage by Congress of the so-called Pure Food and Drugs Act. The fact that Dr. Wiley has been the court of last resort in determining the character of adulterations and the standards of purity, makes anything that he may say on the subject of more than ordinary interest. After looking over its pages we can only say that this is one of the most interesting books which has been presented to us for a long time. After some introductory pages dealing with rations, the definition and composition and classification of foods, Part I deals with Meat and Meat Products; Part II with Poultry, Eggs, and Game Birds; Part III with Fish Foods; Part IV with Milk and Milk Products and Oleomargarine; and then follow chapters upon the various Cereal Foods, Vegetables, Fungi, Sugars and Syrups, Invalid and Infant Foods. An appendix closes the volume and contains food standards, the rules and regulations for the enforcement of the Act which we have spoken of, and Food Decisions under the Pure Food and Drugs Act. The volume is copiously illustrated, fills a distinct niche of its own, and will doubtless have a very large sale both for this reason and because it is ably and well prepared.

ENCYCLOPEDIA AND DICTIONARY OF MEDICINE AND SURGERY. Volume IV. William Green & Sons. Edinburgh and London, 1907.

We have already called attention to the appearance of this valuable encyclopedia published by William Green & Sons, of Edinburgh and London. The present volume extends from "Gum-Resins" to "Intussusception." The Editor is Dr. J. W. Ballantyne, who is well known to many of our readers. Among the contributors to the present volume we find such well-known men as Alexander Morison, T. L. Kelynack, Graham Steele, Moynihan, D'Arcy Power, Milne Bramwell, Colcott Fox, and Sir W. J. Moore. Perhaps the most interesting articles in the volume to the general practitioner are those upon the Heart, Hernia, Hip-joint, and Immunity (this article being written by Prof. Hans Buchner, who has done so much original work along these lines). We are sorry that more encouragement is not given in the article on Hydropathy to the employment of water in typhoid fever and other infectious diseases. Nothing is said in regard to the necessity of applying friction to aid in the dissipation of the heat at the same time that the cold bath is employed. The statement is made that the plunge is to be taken when the temperature is 103°, although most practitioners resort to it when the temperature is at 102°; and finally the erroneous statement is made that the patient should be immersed in a bath at 90°, which should be "cooled down to even 70° or 60°." It is evident from this article that this very valuable method of treating typhoid fever has as yet to win its way to the English practitioner. One of the most extraordinary things in the history of modern medicine is the slowness with which hospital physicians in England have resorted to this life-saving measure.

A MANUAL OF PERSONAL HYGIENE. By American Authors. Edited by Walter M. Pyle, A.M., M.D. Third Edition, Revised and Enlarged. W. B. Saunders Company, Philadelphia and London, 1907. Price $1.50.

Although this is a small volume of less than 500 pages, there are eight contributors to its construction in addition to the editor. The object is to present the best means of developing and maintaining physical and mental vigor, and therefore there are chapters upon the anatomy and physiology of the various parts of the body and statements concerning methods of so-called proper living. Technical phraseology is largely avoided. In the third edition chapters have been added upon home gymnastics, domestic hygiene, and an appendix contains a description of the simpler methods of hydrotherapy, thermotherapy, and mechanotherapy, as well as first aid in medical and surgical accidents and emergencies. The volume closes with a glossary of medical terms. Any book of this nature deals with matters which it is easy for the laity to misunderstand, and we think that certain parts of the volume have not been wisely edited. Certainly, the drip-sheet, the hot-air bath, acid steam bath, and the hot pack are measures which should not be employed by non-medical persons without competent advice. On the other hand, the advice which is given as to travel, exercise, dress, and the care of the skin is most excellent, and we know of no book which can be placed in the hands of the laity which will give them more satisfactory knowledge concerning their own health than the one under notice at present.

CHEMICAL PATHOLOGY. By H. Gideon Wells, Ph.D., M.D. W. B. Saunders Company, Philadelphia and London, 1907. Price $3.25.

This book is a discussion of general pathology from the standpoint of the chemical processes involved, and is written by the Assistant Professor of Pathology in the University of Chicago, who dedicates his work to Dr. Ludvig Hektoen of that city. As the author points out, the subject of biological chemistry has attracted a great deal of attention during the last two decades, at first in physiological studies and more recently in pathological states. Of course, gout and diabetes are the two conditions in which pathological chemistry has done the most work, yet there are a vast number of researches concerning other forms of perverted metabolism which require careful consideration and summarizing. The present volume starts out with

the assumption that the reader has at least some knowledge of organic and physiological chemistry. In order that those who have not kept up with this subject may be primed for consideration of the main part of the book an introductory chapter is introduced which epitomizes the more modern views concerning the chemistry of the proteid molecule, the composition of the animal cell, and the principles of physiological chemistry in so far as they apply to biological problems. Altogether there are 22 chapters in the book. Copious references to sources for collateral reading are given, and few statements are made without giving the references upon which they are based. Dr. Wells's book has already been received in a complimentary way by those who are best able to judge of its value, and as most physicians are, or should be, interested in these subjects, it should have a considerable degree of popularity.

THE PRINCIPLES AND PRACTICE OF DERMATOLOGY. Designed for Students and Practitioners. By William Allen Pusey, A.M., M.D. D. Appleton & Company, New York, 1907.

Dr. Pusey's book is to be classed among the larger and more exhaustive works devoted to this subject. It is very copiously illustrated, containing one colored plate and 367 text illustrations, all of which seem to us far better than those which are commonly found in text-books upon dermatology. In a number of instances the collection of pictures which has been made by Dr. Schamberg, of Philadelphia, is utilized in illustrating the text, and as far as it is possible for black and white pictures to show skin lesions, these undoubtedly are excellent in their quality. In connection with the treatment of epithelioma of the skin we note with interest that the author is evidently a strong believer in the employment of the *x*-rays and caustics in distinction from the knife. Pusey asserts that his experience has taught him that recurrence is far greater after excision than after treatment by the *x*-rays or caustics. In those instances in which the mucous membrane or glands are involved, he believes that an operation followed by *x*-rays is the best treatment. Small epithelioma can be destroyed by electrolysis. In most of the instances in which caustics do not seem to act well the difficulty lies in the crude method of employing them and the failure to recognize the exact conditions in which they are of value. One of the things in this volume that strikes us as being particularly interesting to the general practitioner is the large amount of definite and direct information which is given by the writer concerning the plans of treatment which he advocates.

THE DIAGNOSTICS OF THE DISEASES OF CHILDREN. By Le Grand Kerr, M.D. W. B. Saunders Company, Philadelphia, 1907. Price, $5.00.

Under this somewhat awkward title the writer has prepared a very useful text-book upon the diagnosis of diseases as they are met with in children. The book covers nearly 550 pages, but could easily be condensed into a much smaller volume by using less heavy paper, less margin, and less space between the lines. On the other hand, this generosity as to space on the part of the publisher renders the book easily read and attractive to the eye. A considerable number of black-and-white illustrations are scattered through the volume. Many of these illustrations are modeled after those found in Butler's Diagnosis. The book does not claim, so far as we have been able to discover, any originality, and most of the facts which are stated in it will be found in the larger text-books of diseases for children. The statements made in it, however, are correct and concise, and those who desire a book devoted solely to diagnosis in diseases of children will find what they need in Dr. Kerr's volume.

THE CARE OF THE BABY. By J. P. Crozer Griffith, M.D. Fourth Edition, Thoroughly Revised. W. B. Saunders Company, Philadelphia, 1907. Price $1.50.

With this manual for mothers and nurses many of our readers are probably familiar. The book is designed, as its title indicates, for the use of mothers and nurses, and not for physicians, but, on the other hand, there is scarcely any practitioner, and certainly no young one, who will not gain much valuable information from a perusal of its pages, both as to the clothing, feeding, and nursing of children under five years of age. As in

other books upon this subject, the author at times in giving information concerning the various infectious diseases treads on ground which may not be easily trod by members of the laity, but as a rule no information is given which will cause unnecessary alarm. That such a book often gives comfort and valuable information to anxious mothers and nurses cannot be denied, and to such persons this one can be cordially recommended.

THE AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. N. Dorland, A.M., M.D. Fifth Edition, Revised and Enlarged. W. B. Saunders Company, Philadelphia, 1907. Price $1.00.

It is but a few months since that we noticed in terms of praise the "American Illustrated Medical Dictionary" by the same author, and this pocket dictionary is practically a condensation of that larger volume. It is a duodecimo of 578 pages, and in addition to containing brief definitions of most medical terms, and the terms used in kindred sciences, it also has a considerable number of tables with the various weights and measures and doses. In other words, it is supposed to be emphatically a dictionary for students rather than practitioners, who usually require more extensive definitions when referring to a work of reference.

THE ESSENTIALS OF HISTOLOGY, DESCRIPTIVE AND PRACTICAL. By Edward A. Schäfer, F.R.S. Seventh Edition, Revised and Enlarged. Lea Brothers & Company, Philadelphia, 1907. Price $3.50.

This standard book upon Histology, which is to microscopic anatomy what Gray's is to macroscopic anatomy, has appeared in a new edition which maintains all the advantages of the earlier edition, and is pretty thoroughly up to date. It is very copiously illustrated in black and white and colors, and is printed on excellent paper, which is, however, so thin that the book can be readily carried about. To those who are interested in the study of histology it is only necessary to announce the appearance of a new edition.

A MANUAL OF OBSTETRICS. By A. F. A. King, A.M., M.D., LL.D. Tenth Edition, Revised and Enlarged. Lea Brothers & Co., Philadelphia and New York, 1907.

Dr. King's little work upon Obstetrics has so long been one of the standards with medical students and medical practitioners that a review of its contents is unnecessary. The author has, of course, taken the opportunity to bring the book up to date, to freely illustrate it where illustrations are of practical value, and the book will doubtless remain as popular as it has been for many years.

CORRESPONDENCE.

LONDON LETTER.

BY G. F. STILL, M.A., M.D.

A case of considerable interest was reported at the Pathological Society of London during this month by Professor Grünbaum, of Leeds University. The patient was a chimpanzee, whose portrait was shown, the patient himself having departed this life. Over the right eyebrow an abrasion had been made, and into this had been rubbed an excised hard chancre from a man. After an interval of weeks a rash had followed, which was more or less generalized; the animal recovered from this acute stage of the syphilitic infection, and some months later began to have fits, apparently Jacksonian in character. After its death, several months after the inoculation with syphilis, lesions were found in the brain which were thought to be syphilitic in character, and the spirochæta pallida was demonstrated in some parts of the body.

Many of the medical societies of London are nearing the day of dissolution, and it must be admitted that their mortal remains are remarkably small, for they have dwindled into a state of feebleness which makes it fortunate that they are very soon to take

a fresh lease of life as a corporate body, the Royal Society of Medicine; but whilst some of these are "on their last legs," and the new and amalgamated society is yet unborn, it is surprising to see an entirely new and independent medical society spring into being and apparently start life with a vigor far surpassing anything familiar to our London societies. This new organization goes by the cumbrous title of "The Association of Physicians of Great Britain and Ireland," and it has just held its first meeting, which naturally took place in London. Rarely does so enthusiastic or crowded an audience gather to listen to medical papers, or rather medical talks, for one of the features of this new association is the tabooing of written or read "papers"—the communications are intended to be unwritten as far as possible; that ubiquitous wet-blanket, the reporter, is excluded. The meetings—for each annual meeting is to occupy two whole and consecutive days and consist of morning and afternoon sessions—were crowded with hospital physicians from London and from all the provincial teaching hospitals. The first business was to elect a president, and for this post the right person was obviously the leader of the medical profession in this country, the president of the Royal College of Physicians, Sir Douglas Powell. Then communications were listened to, and many of very great interest were made; in the afternoon patients were shown; and on the evening of the first day the association held its first dinner at the Trocadero Restaurant. Sir Douglas Powell took the chair, and was supported by Professor Clifford Allbutt, Professor Osler, the president of the Royal College of Physicians of Ireland, and many other leading members of the profession. Altogether the first meeting of this new association has been a brilliant success, and it is to be hoped that it may continue to flourish, and perhaps there is the more chance for it to do so, as it is to meet only once a year for two days, and each time at a different town, so that custom may not "stale its infinite variety." Next year it is to be in Edinburgh.

An interesting departure was made by the children's hospitals of London this month, by holding a conference of representatives from all these institutions to consider the problem of the milk supply to such hospitals. There are at least eight hospitals for children in London, exclusive of some special hospitals, such as the Alexander Hospital for Hip Disease, and yet hitherto there has been no attempt to coöperate in matters of hospital organization. It was felt that in a matter of such importance as the milk supply some attempt at united effort might be made, and two representatives from each children's hospital were called together at the Hospital for Sick Children, Great Ormond Street, to draw up some recommendations for general use. The main points agreed upon were that the hospital committees shall insist upon a supply of pure milk from healthy cows which are to be tested at least quarterly by a veterinary surgeon; that the milk shall contain not less than 3 to 5 per cent of fat; that the hospitals shall have the right to inspect the farms which supply the milk; that the milk shall be strained and refrigerated, canned and sealed at the farm, and delivered with the seal intact at the hospital; that the milk shall not be pasteurized without the special sanction of the hospital committee; and that the milk shall be subjected to chemical and bacteriological tests once a week at the hospital. It remains to be seen whether these are mere counsels of perfection, but anyway the promulgation of these recommendations is a hopeful indication that the children's hospitals are waking up to the fact of their responsibility in the matter of forcing upon the milk trade more wholesome conditions of supply.

Sir Samuel Wilkes once said that on his retirement from the active to the consulting staff of his hospital he was called a "consulting physician" because no one ever consulted him, apparently on the same principle which made Varro say that *"lucus"* was derived *"a non lucendo."* Each year sees some of our best-known and most eminent physicians retiring from the arena of hospital work; in some of our London hos-

pitals this takes place when a certain age limit is reached, in others after a certain period of service. In the past month two well-known physicians have retired from the active staff of their respective hospitals —Dr. Frederic Taylor, whose text-book of medicine has for many years made his name familiar to all medical students, and Dr. D. B. Lees, of St. Mary's Hospital, who had advocated so powerfully the value of the ice-bag in medical treatment, for instance in pneumonia, pericarditis, and even in nephritis. It might be well if the exalted rank of consulting physician carried with it some opportunities for bestowing on the hospitals the often invaluable help of long years of large experience.

Probably few men would have the pluck or the patience to face a gathering of such persons as met at the Portman Rooms in Baker Street last week, to uphold the thesis that vivisection is unnecessary to the advancement of science and medicine, nor is its practice in accordance with the claims of morality and the further development of altruism. But a champion of truth and common sense was found in Professor Halliburton, the world-renowned physiologist, who accepted the challenge to come and debate the point with some of the most rabid of the antivivisectionists. The hall was packed with supporters of both sides, and so intense was the interest felt that almost involuntary exclamations were heard from time to time from all parts of the hall as the combatants waged their wordy warfare. I need not report here the details of the debate; they have been published in full elsewhere. Suffice it to say that Professor Halliburton delivered such a masterly vindication of vivisection that no one who was not familiar with the impenetrable ignorance and bias of the antivivisector could have supposed it possible that at the end of the meeting there would be a majority against vivisection, but so it was.

A pleasing hospitality is that of the club known as "The Maccabæans," a body of Jews in London, who each year entertain representative members of some department of activity, and this year honored the medical profession. The presidents of both the Royal Colleges, of Surgeons and Physicians, were there, also ex-presidents and the professors of surgery and medicine, and "a great many more of lesser degree. In sooth a goodly company." Mr. Henry Morris, the president of the Royal College of Surgeons, made a humorous speech. Many complimentary things, he said, had been written in Hebrew and Greek about physicians that were really intended for surgeons. Referring to the conflicting manifestoes which have been issued recently by members of the medical profession on the use of alcohol, he said that an ancient code, dating back to 2150 B. C., recognized wine-houses as licensed institutions; the wine, however, it must be mentioned, was not made from the juice of the grape but from prunes!

A few days ago there passed away one whose name was well known in this country as a distinguished physician, Sir Joseph Fayrer. He served as a surgeon through the Indian Mutiny, and became a great authority on matters of hygiene and medicine connected with India. He was honorary physician to Queen Victoria and subsequently to our present King, and passed to his rest, laden with honors, at the age of eighty-three years.